ANNUAL SURVEILLANCE REPORT OF DRUG-RELATED RISKS AND OUTCOMES

UNITED STATES, 2019

Centers for Disease Control and Prevention
National Center for Injury Prevention and Control

ACKNOWLEDGEMENTS

This report is based on data collected from multiple sources and is updated annually. Data on opioid prescriptions filled were obtained from IQVIA™ Xponent and the Total Patient Tracker (TPT). Data on drug use, misuse, substance use disorder, and treatment were obtained from the Substance Abuse and Mental Health Services Administration's (SAMHSA) 2017 and 2018 National Survey on Drug Use and Health (NSDUH). Data on nonfatal overdose hospitalizations and emergency department (ED) visits were obtained from the Healthcare Cost and Utilization Project's (HCUP) National Inpatient Sample (NIS) and Nationwide Emergency Department Sample (NEDS) 2016 surveys, which are sponsored by the Agency for Healthcare Research and Quality. Data on mortality were obtained from the National Vital Statistics System's (NVSS) 2017 mortality files through CDC WONDER (Wide-ranging Online Data for Epidemiology Research).

The report is accessible online at: **https://www.cdc.gov/drugoverdose/pdf/pubs/2019-cdc-drug-surveillance-report.pdf**.

Suggested Citation
Centers for Disease Control and Prevention. 2019 Annual Surveillance Report of Drug-Related Risks and Outcomes — United States Surveillance Special Report. Centers for Disease Control and Prevention, U.S. Department of Health and Human Services. Published November 1, 2019. Accessed [date] from **https://www.cdc.gov/drugoverdose/pdf/pubs/2019-cdc-drug-surveillance-report.pdf**.

TABLE OF CONTENTS

105 FIGURES

114 SUPPLEMENTAL TABLES

EXECUTIVE SUMMARY

The Current Drug Overdose Epidemic in the United States

Over 700,000 people died in the United States from drug overdoses between 1999 and 2017, with 70,237 deaths in 2017 alone.[1] Of these 70,237 deaths, 67.8% involved an opioid.[1] The age-adjusted drug overdose death rate has significantly increased from 6.0 (1999) to 21.7 (2017) deaths per 100,000 population.[2] However, as of September 2019, provisional mortality estimates through February 2019 suggest slight decreases in drug overdose deaths since 2017 in the United States.[3]

The observed increase in opioid overdose deaths can be outlined in three distinct waves. In the 1990s, deaths involving prescription opioids began increasing (Wave 1).[4] In 2010, dramatic increases from heroin-involved deaths occurred (Wave 2).[5] Finally, since 2013, deaths involving synthetic opioids other than methadone (e.g., illicitly manufactured fentanyl) have risen at an unprecedented rate (Wave 3).[6-8] From 2016 to 2017 alone, synthetic opioid-involved overdose deaths increased by 45.2%.[1] More recently, we have seen increases in overdose deaths involving cocaine (largely with opioids) and psychostimulants with abuse potential (both with and without opioids).[9]

This is the third annual drug surveillance report summarizing the latest data at the national level for opioid prescribing patterns, drug use, nonfatal overdoses, and fatal overdoses related to the current drug overdose epidemic in the United States. This report is intended to serve as a resource for 1) people charged with addressing this ongoing national crisis, 2) members of the public who want to stay informed about the most recently available data, and 3) people who are interested in learning about the current drug overdose landscape and developing innovative and evidence-based solutions to address this crisis.

This report presents information on four types of outcomes from four different data sources:

1 Opioid prescribing, 2006-2018, from IQVIA™.
   – This section includes estimates of the total number of opioid prescriptions filled in the United States from retail pharmacies.
2 Drug use, misuse, substance use disorder, drug initiation, and treatment, 2017 and 2018, from the National Survey on Drug Use and Health (NSDUH), a survey administered by the Substance Abuse and Mental Health Services Administration (SAMHSA).
   – This section includes estimates of self-reported use of prescription pain relievers, tranquilizers, stimulants, and sedatives in the past month and past year. In addition to prescription use, this section includes self-reported use of marijuana, opioids (heroin use and prescription pain reliever misuse), heroin, cocaine, and methamphetamine in the past month and past year. This section also includes self-reported substance use initiation, disorder, and treatment.

3   Nonfatal overdose hospitalizations and emergency department (ED) visits, 2016, from the Healthcare Cost and Utilization Project (HCUP), a product of the Agency for Healthcare Research and Quality (AHRQ).
– This section includes nonfatal emergency department visits and hospitalizations from poisonings or overdoses stemming from the following: all drugs, all opioids, heroin, methadone, other specified opioids, cocaine, and methamphetamine.

4   Drug overdose mortality, 1999-2017, from the National Vital Statistics System (NVSS) Mortality Component, maintained by the National Center for Health Statistics (NCHS) at the Centers for Disease Control and Prevention (CDC).
– This section includes fatalities from drug overdose as the underlying cause of death for the following drugs: heroin, natural/semisynthetic opioids (e.g., hydrocodone, oxycodone), methadone, synthetic opioids other than methadone (e.g., fentanyl, tramadol), any opioids, cocaine, and psychostimulants with abuse potential (e.g., methamphetamine, dextroamphetamine).

Opioid Prescribing

The rate of opioid prescriptions filled decreased by 29.0% from 2006 to 2018. In 2006, 72.4 opioid prescriptions per 100 persons were filled, and this rate increased annually by 1.9% from 2006 to 2012 (81.2 opioid prescriptions per 100 persons), then decreased by 5.2% annually from 2012 to 2016. Starting in 2016, this rate fell more sharply and decreased by 12.4% annually from 2016 to 2018. In 2018, 51.4 opioid prescriptions per 100 persons were filled.

In 2018, 15.0% of the U.S. population filled one or more opioid prescriptions. In 2018, 12.8% of males and 17.2% of females filled at least one prescription for an opioid.

Between 2006 and 2018, the annual rate for filling high dosage opioid prescriptions (≥ 90 morphine milligram equivalents [MME]/day) decreased from 11.5 to 3.9 prescriptions per 100 persons, an overall relative reduction of 66.1%.

Drug Use, Misuse, and Substance Use Disorder, and Treatment

In 2018, over 53 million people aged 12 years and older in the United States, or 19.4% of people aged 12 years and older, reported use of illicit drugs or misuse of prescription drugs in the past year. This estimate includes use of marijuana, heroin, cocaine (including crack), methamphetamines, hallucinogens, inhalants, and the misuse of prescription drugs. Among people aged 12 years and older in the United States, the estimated prevalence of illicit drug use in the past year was 15.9% for marijuana, 0.3% for heroin, 2.0% for cocaine, and 0.7% for methamphetamines. Given the small reported estimated prevalence and burden for hallucinogens and inhalant use, these estimates are not individually reported in this surveillance report but are included in the total estimates. Estimated prevalence of prescription drug misuse by drug type in the past year was 3.6% for prescription pain, 1.9% for prescription stimulants, 2.1% for prescription tranquilizers, 0.4% for prescription sedatives, and 2.0% for prescription benzodiazepines. Reported prevalence of opioid misuse (i.e., heroin use or prescription pain reliever misuse) in the past year was 3.7%.

In 2018, nearly 2.1 million people in the United States reported that they had received treatment in the past year to reduce or stop illicit drug use, including prescription drug misuse, or for medical problems associated with illicit drug use.

Nonfatal Overdose Hospitalizations and Emergency Department (ED) Visits

An estimated 326,200 hospitalizations for nonfatal drug poisonings, all intents (including unintentional, undetermined intent, and those attributed to intentional self-harm and assault), occurred in 2016, with an age-adjusted rate of 98.1 hospitalizations per 100,000 population. Age-adjusted rates of hospitalizations per 100,000 population by drug type for all intents were 26.6 for all opioid poisonings, 7.0 for heroin poisonings,

1.6 for methadone poisonings, 18.4 for other opioid poisonings, 6.1 for cocaine poisonings, and 5.7 for methamphetamine poisonings.

An estimated 577,794 ED visits occurred for all nonfatal drug-related poisonings, all intents, in the United States in 2016, with an age-adjusted rate of 183.2 visits per 100,000 population. Age-adjusted rates of ED visits per 100,000 population by drug type for all intents were 62.0 for all opioid poisonings, 39.1 for heroin poisonings, 1.0 for methadone poisonings, 22.1 for other opioids poisonings, 2.7 for cocaine poisonings, and 5.3 for methamphetamine poisonings.

By region, the West had the highest rates of both hospitalizations and ED visits among all intents for methamphetamine-related poisonings.

Drug Overdose Mortality

A total of 70,237 drug overdose deaths occurred in 2017: an age-adjusted rate of 21.7 per 100,000 persons. Prescription and/or illicit opioids were involved in 67.8% (47,600) of these deaths. Among opioid-involved deaths, the category synthetic opioids other than methadone (a category that includes illicitly manufactured fentanyl) was the most common (28,466 deaths). The prescription opioids category, which includes natural and semi-synthetic opioids (e.g., oxycodone and hydrocodone) and methadone, was the second most common with 17,029 deaths. Heroin was involved in 15,482 deaths. Natural and semi-synthetic opioids were involved in 14,495 deaths, and methadone was involved in 3,194 deaths. Cocaine was involved in 13,942 deaths, and 10,333 persons died from drug overdoses involving psychostimulants with abuse potential (e.g., methamphetamine). Some deaths involved more than one type of drug; these deaths were included in the counts and rates for each drug category. Therefore, categories are not mutually exclusive.

The rapid increase in deaths involving heroin that began in 2010 plateaued from 2015 to 2017, with nonsignificant changes in rates between those years. Rates for deaths involving synthetic opioids other than methadone continued to increase sharply as they have since 2013, with rates increasing an average of 69.8% annually from 2013 to 2017. Deaths involving cocaine have increased sharply since 2014, increasing on average by 37.6% annually from 2014 to 2017. Deaths involving psychostimulants with abuse potential have increased sharply since 2012, with an average of 30.1% annually from 2012 to 2017. While rates of deaths involving prescription opioids increased sharply from 1999 to 2006, rates from 2006 to 2017 increased only by an annual average change of 2.0%.

This report presents the most recent final mortality data that are currently available. CDC's National Center for Health Statistics releases provisional monthly data on drug overdose deaths. The provisional estimates can be found at: **https://www.cdc.gov/nchs/nvss/vsrr/drug-overdose-data.htm**

Limitations

This report has important limitations. With the use of four independent data sources, terminology and definitions varied across datasets. Further, the most recent year of available data was not consistent across datasets. Collectively, comparability of data across datasets in this report is limited. In addition, this report does not quantify polysubstance use (i.e., the consumption of more than one drug over a defined period, simultaneously or at different times, for either therapeutic purposes or misuse) or overdose. However, this report does not exclude overdoses where multiple substances were involved. For a detailed description of the data sources, definitions, and restrictions, please refer to the technical notes and footnotes.

Conclusions

The data from these four sources suggest the following conclusions:

- Rates of opioid prescriptions filled in 2018 continued to decrease, following the trend that began in 2012.
- In 2018, among persons aged 12 years and older, 19.4% reported any illicit drug use or prescription drug misuse, 15.9% reported use of marijuana, 3.7% reported opioid misuse, 3.6% reported misuse of prescription pain relievers, 2.1% reported misuse of prescription tranquilizers, 2.0% reported use of cocaine, 2.0% reported misuse of prescription benzodiazepines, and 1.9% reported misuse of prescription stimulants. Misuse of prescription sedatives, heroin, and methamphetamine were each less than 1.0%.
- In 2018, 25.9% of persons meeting the criteria for substance use disorder accessed treatment.
- Among all hospitalizations and all emergency department visits for methamphetamine poisonings, the West region consistently experienced the highest rates of suspected methamphetamine poisonings.
- The rate of drug overdose deaths increased significantly from 1999 to 2017.
- There were only small increases in prescription opioid-involved deaths from 2006 to 2017, and rates in heroin-involved deaths were stable from 2015 to 2017.
- Deaths rates involving synthetic opioids other than methadone, cocaine, and psychostimulants with abuse potential all increased from 2016 through 2017.

NOTABLE REPORT CHANGES FROM 2018 TO 2019

Opioid Prescribing

Starting with 2017 data, IQVIA™ changed the frame of measurement from number of prescriptions "dispensed to bin" to number of prescriptions "sold to the patient." To do this, IQVIA™ eliminated the effects of voided and reversed prescriptions (prescriptions that were never received by the patient). This change resulted in a 1.9% downward shift in prescriptions filled for 2017 and 2018, and this modification is represented in the data presented in this report. When analyzing trends using IQVIA™ data, we compared data with and without this modification and found no significant differences in our findings. Additionally, this report includes additional subcategories for opioid prescription dosages (i.e., < 3 days, ≥ 3 and < 7 days) based on days' supply recommendations in the CDC Guideline for Prescribing Opioids for Chronic Pain—United States, 2016.[10] The Guideline recommends prescribing opioids at the lowest effective dose and that in most cases of acute pain not related to trauma or surgery, a supply of 3 or fewer days will be sufficient and more than 7 days will rarely be needed.

Drug Use, Misuse, Substance Use Disorder, Drug Initiation, and Treatment

Due to the timing of the release of the **2018 National Survey on Drug Use and Health (NSDUH)**, we included both 2017 and 2018 data in this report. In SAMHSA's published reports of 2018 NSDUH results, the 26-34 and ≥ 26 age groups were not included for some tables, and new age categories were added. Those changes are reflected in this report. Additionally, in SAMHSA's published reports of 2018 NSDUH results, self-report misuse of prescription benzodiazepines in the past year was included; therefore, these data are included in this report for 2018.

The **2017 National Survey on Drug Use and Health (NSDUH)** slightly altered question wording surrounding the use and misuse of prescription psychotherapeutics compared to the 2016 NSDUH. For the 2017 NSDUH, text was added to the questions about misuse of "any other" prescription pain reliever, stimulant, or sedative to remind respondents not to include over-the-counter medications (e.g., Tylenol®, Dexatrim®, Sominex®).

Nonfatal Overdose Hospitalizations and Emergency Departments (ED) Visits

Information on medically attended, nonfatal overdose hospitalization and ED visit rates was obtained from the most recently available year of the Healthcare Cost and Utilization Project (HCUP) data. In this report, we present HCUP data from 2016. HCUP data sources transitioned from using *International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD-9-CM) diagnosis codes to *International Classification of Diseases, Tenth Revision, Clinical Modification/Procedure Coding System* (ICD-10-CM/PCS) on October 1, 2015 (the beginning of fiscal year 2016). In the 2018 surveillance report, we presented both ICD-9-CM and ICD-10-CM/PCM data, but for this report, we have only ICD-10-CM/PCS codes available in HCUP. Additionally, due to changes in the way drug poisoning intent was coded from ICD-9-CM to ICD-10-CM/PCS, this report presents data for all intents as well as for unintentional and undetermined intents separately. Due to the differences in the definitions used between the two reports, numbers and rates should not be compared between the 2018 and 2019 surveillance reports.

Drug Overdose Mortality

The mortality table from previous Surveillance Reports ("Number and age-adjusted rates of drug overdose deaths involving selected drugs by sex, age group, race/ethnicity, census region, urbanization, and intent — United States") has now been split into three tables for easier viewing: Table 4a: Number and age-adjusted rates per 100,000 population of overall drug overdose deaths and drug overdose deaths involving any type of opioid, by sex, age group, race/ethnicity, census region, urbanization, and intent — United States; Table 4b: Number and age-adjusted rates per 100,000 population of drug overdose deaths involving selected opioids by sex, age group, race/ethnicity, census region, urbanization, and intent — United States; and Table 4c: Number and age-adjusted rates per 100,000 population of drug overdose deaths involving cocaine and other psychostimulants with abuse potential by sex, age group, race/ethnicity, census region, urbanization, and intent — United States. In addition, a supplemental table was added detailing the trend analyses for drug overdose deaths between 1999 and 2017: Supplemental Table 3a. Trend analyses of age-adjusted rates per 100,000 population of drug overdose deaths by drug or drug class—United States, 1999-2017.

RESULTS OF THE 2019 SURVEILLANCE REPORT

Opioid Prescribing

This section includes estimates of the total number of opioid prescriptions filled in the United States from retail pharmacies based on the data available to CDC. Data on estimates of opioid prescriptions filled from IQVIA™ are presented for the following outcomes:

- National estimates of total number and percentage of persons who had at least one prescription filled for an opioid by age and sex — United States, 2018 (**Table 1a**)
- Total number and rate of opioid prescriptions and morphine milligram equivalents (MME) dispensed per 100 persons annually — United States, 2018 (**Table 1b**)
- Rates of opioid prescriptions filled per 100 persons by type, dosage, and state— United States, 2018 (**Table 1c**)
- Trend analyses of opioid prescriptions filled — United States, 2006-2018 (**Table 1d**)
- Rates for overall annual opioid prescriptions filled per 100 persons and for high-dosage prescriptions (≥ 90 morphine milligram equivalents [MME]/day) — United States, 2006-2018 (**Figure 1a**)
- Rates for overall annual opioid prescriptions filled per 100 persons by days of supply per prescription — United States, 2006-2018 (**Figure 1b**)
- Average daily morphine milligram equivalents (MME) per opioid prescription dispensed — United States, 2006-2018 (**Figure 1c**)
- Average days of supply per opioid prescription filled — United States, 2006-2018 (**Figure 1d**)

All prescription fill rates are presented per 100 persons. For more detailed information, including definitions, please refer to the table footnotes and technical notes.

Annual estimates of prescription fill rates for all opioids, high-dosage opioids (≥ 90 MME) dispensed, and days of supply per prescription in the United States during 2006-2018 are reported in Supplemental Table 1.

Person-level opioid prescribing, United States, 2018 (**Table 1a**)

- A total of 49,515,948 persons, or 15.0% of the population, filled at least one prescription for an opioid.
- 12.8% of males and 17.2% of females filled at least one prescription for an opioid in 2018.
- Person-level prescribing was highest among older age groups, with 25.0% of persons aged 65 years and older, 23.9% of persons aged 55-64 years, and 20.4% of persons aged 45-54 years having filled at least one prescription for an opioid.

Opioid prescription fill rates and dosages, United States, 2018 (**Table 1b**)

- 168,158,611 opioid prescriptions were filled at retail pharmacies; the total opioid prescription fill rate was 51.4 prescriptions per 100 persons. One opioid prescription was written for every 1.95 persons. This calculation was not adjusted for insurance status.
- Among the 15% of persons had at least one prescription filled per year, each patient received on average 3.4 prescriptions per year.

- The long-acting or extended-release (LA/ER) opioid (i.e., slower-acting medications with a longer duration of pain-relieving action) prescription dispense rate was 4.5 per 100 persons.
- The prescription fill rate for < 30 days of supply per prescription was 29.4 per 100 persons; for ≥ 30 days of supply, the rate was 22.0 per 100 persons; for < 3 days of supply, the rate was 8.2 per 100 persons; for ≥ 3 and < 7 days of supply, the rate was 10.0 per 100 persons in 2018; and for < 7 days of supply, the rate was 18.2 per 100 persons.
- The average number of opioid prescriptions filled per patient who filled an opioid prescription was 3.4, and the average number of days of supply per prescription was 18.4.
- The total dosage or amount of opioid prescriptions dispensed in 2018 was 138,900,570,581 morphine milligram equivalents (MME).
- The average dosage per prescription dispensed was 828.1 MME, and the average daily dosage per prescription filled was 42.9 MME.

Opioid prescription fill rates and dosages by state, 2018 (**Table 1c**)

- Opioid prescription fill rates ranged from 25.0 prescriptions per 100 persons in the District of Columbia to 97.5 per 100 persons in Alabama.
  – States with the highest opioid prescription fill rates were Alabama (97.5), Arkansas (93.5), Tennessee (81.8), Kentucky (79.5), and Louisiana (79.4).
  – States with the lowest opioid prescription fill rates were the District of Columbia (25.0), Hawaii (33.4), New York (34.0), California (35.1), and Massachusetts (35.3).

- LA/ER opioid prescription fill rate ranged from 1.6 prescriptions per 100 persons in the District of Columbia to 10.1 per 100 persons in Delaware.
  – States with the highest LA/ER opioid prescription fill rates were Delaware (10.1), Oklahoma (7.4), Tennessee (7.0), Vermont (7.0), New Hampshire (7.0), and Alabama (6.9).
  – States with the lowest LA/ER opioid prescription fill rates were the District of Columbia (1.6), Texas (2.8), Illinois (2.9), California (3.0), and Minnesota (3.4).

- High-dosage opioid prescription fill rates (≥ 90 MME/day) ranged from 1.1 prescriptions per 100 persons in the District of Columbia to 7.8 in Delaware.
  – States with the highest high-dosage opioid prescription fill rates were Delaware (7.8), Alaska (6.8), Vermont (6.8), Utah (6.7), and New Hampshire (6.4).
  – States with the lowest high-dosage opioid prescription fill rates were the District of Columbia (1.1), Texas (2.0), Illinois (2.2), North Dakota (2.3), and Minnesota (2.3).

Trends in Opioid Prescription Fill Rates and Dosages, 2006–2018

All opioids (**Table 1d** and **Figure 1a**)

Between 2006 and 2018, the annual prescription fill rate per 100 persons decreased from 72.4 to 51.4 per 100 persons for all opioids, an overall relative reduction of 29.0% (Supplemental Table 1a). The prescription fill rate for all opioids initially increased annually from 2006 to 2012 by 1.9% (95% confidence limits [CL]: 0.9, 2.9), decreased annually from 2012 to 2016 by 5.2% (95% CL: -7.9, -2.5), and continued to decrease annually by 12.4% (95% CL: -17.3, -7.2) from 2016 to 2018.

High-dosage opioids (≥ 90 MME/day) (**Table 1d** and **Figure 1a**)

Between 2006 and 2018, the annual prescription fill rate per 100 persons decreased from 11.5 to 3.9 for high-dosage opioids, an overall relative reduction of 66.4% (Supplemental Table 1a). The change in high-dosage opioid prescription fill rate was not significant between 2006 and 2009 (annual percent change [APC]: -0.5, 95% CL: -10.5, 10.5), and then decreased annually by 8.9% (95% CL: -12.1, -5.6) from 2009 to 2016 and then change was not significant between 2016 and 2018 (APC: -18.5, 95% CL: -34.0, 0.7).

Annual prescription fill rate per 100 persons by days of supply per opioid prescription (≥ 30 days, < 30 days, < 3 days, and ≥ 3 and < 7 days)

≥ 30 days of supply (**Table 1d**, **Figure 1b**, and **Supplemental Table 1a**)
Between 2006 and 2018, the annual prescription fill rate per 100 persons increased from 17.6 to 22.0 for prescriptions with ≥ 30 days of supply, an overall relative increase of 25.0%. The annual prescription fill rate increased annually by 10.3% (95% CL: 8.5, 12.1) from 2006 to 2010 and by 1.9% (95% CL: 0.2, 3.5) from 2010 to 2015, and then decreased annually by 8.4% (95% CL: -10.7, -6.0) from 2015 to 2018.

< 30 days of supply (**Table 1d**, **Figure 1b**, and **Supplemental Table 1a**)
Between 2006 and 2018, the annual prescription fill rate per 100 persons decreased from 54.7 to 29.4 for prescriptions with < 30 days of supply, an overall relative reduction of 46.3%. The annual prescription fill rate did not significantly change between 2006 and 2012 (APC: -0.5, 95% CL: -1.6, 0.5), decreased annually by 7.6% (95% CL: -10.4, -4.7) from 2012 to 2016, and further decreased 13.7% (95% CL: -18.8, -8.3) annually from 2016 to 2018.

< 3 days of supply (**Table 1d**, **Figure 1b**, and **Supplemental Table 1a**)
Between 2006 and 2018, the annual prescription fill rate per 100 persons decreased from 16.2 to 8.2 for prescriptions with < 3 days of supply, an overall relative reduction of 49.4%. The annual prescription fill rate decreased annually by 2.4% (95% CL: -3.0, -1.7) from 2006 to 2012, further decreased annually by 8.2% (95% CL: -9.9, -6.4) from 2012 to 2016, and continued to decrease by 10.5% (95% CL: -13.8, -7.1) annually from 2016 to 2018.

< 7 days of supply (**Table 1d**, **Figure 1b**, and **Supplemental Table 1a**)
Between 2006 and 2018, the annual prescription fill rate per 100 persons decreased from 35.3 to 18.2 for prescriptions with < 7 days of supply, an overall relative reduction of 48.6%. The annual prescription fill rate did not change significantly between 2006 and 2010 (APC: -1.1, 95% CL: -2.8, 0.7), decreased annually by 5.3% (95% CL: -7.9, -2.5) from 2010 to 2014, and further decreased 10.0% (95% CL: -11.6, -8.4) annually from 2014 to 2018.

≥ 3 and < 7 days of supply (**Table 1d**, **Figure 1b**, and **Supplemental Table 1a**)
Between 2006 and 2018, the annual prescription fill rate per 100 persons decreased from 19.1 to 10.0 for prescriptions with ≥ 3 and < 7 days of supply, an overall relative reduction of 47.7%. The annual prescription fill rate did not change significantly between 2006 and 2010 (APC: -0.6, 95% CL: -2.3, 1.1), decreased annually by 5.3% (95% CL: -7.9, -2.6) from 2010 to 2014, and further decreased 10.2% (95% CL: -11.8, -8.6) annually from 2014 to 2018.

Average daily dosage (MME/day) per prescription dispensed (**Table 1d**, **Figure 1d**, and **Supplemental Table 1a**)

Between 2006 and 2018, the average daily MME per prescription dispensed decreased from 59.7 to 42.9 for all opioids, an overall relative reduction of 28.1%. The MME per prescription dispensed rate did not change significantly between 2006 and 2010 (APC: -1.1, 95% CL: -2.3, 0.2), decreased annually by 4.3% (95% CL: -8.2, -0.2) from 2010 to 2013, and further decreased 2.7% (95% CL: -3.6, -1.8) annually from 2013 to 2018.

Average days of supply per prescription filled (**Table 1d**, **Figure 1c**, and **Supplemental Table 1a**)

Between 2006 and 2018, average days of supply per prescription filled increased from 13.3 to 18.4 days, an overall relative increase of 37.6%. The rate increased annually by 4.0% (95% CL: 3.5, 4.4) from 2006 to 2010, by 2.6% (95% CL: 2.3, 2.8) from 2010 to 2016, and was not significant between 2016 and 2018 (APC: 0.7, 95% CL: -0.5, 2.0).

Drug Use, Misuse, Substance Use Disorder, Drug Initiation, and Treatment

This section includes estimates of self-reported use of prescription pain relievers, tranquilizers, stimulants, and sedatives in the past month and past year for both 2017 and 2018. In addition to prescription use, this section includes self-reported use of marijuana, opioids (heroin use and prescription pain reliever misuse), heroin, cocaine, and methamphetamine in the past month and past year. This section also includes self-reported substance use initiation, disorder, and treatment. Illicit drug use includes the use of marijuana, cocaine (including crack), heroin, hallucinogens, inhalants, or methamphetamine. Prescription drug misuse includes the misuse of prescription pain relievers, tranquilizers, stimulants, sedatives, and benzodiazepines. Benzodiazepines can be prescribed as a tranquilizer or sedative. Regardless of whether specific benzodiazepines were reported as tranquilizers or sedatives, these responses were included in the aggregate measures of misuse of benzodiazepines

Self-reported data for persons in the United States aged 12 years and older are presented from the **2017** and **2018** National Survey on Drug Use and Health (NSDUH):
- Self-reported prevalence of illicit drug use and prescription drug misuse in the <u>past month</u>, persons 12+ years old, numbers in thousands — United States, 2017 (**Table 2a**)
- Self-reported prevalence of illicit drug use and prescription drug misuse in the <u>past year</u>, persons 12+ years old, numbers in thousands — United States, 2017 (**Table 2b**)
- Self-reported prevalence of any prescription drug use (including misuse) in the <u>past year</u>, persons 12+ years old, by drug type, numbers in thousands — United States, 2017 (**Table 2c**)
- Self-reported prevalence of <u>past year initiation</u> of illicit drug use and prescription drug misuse, persons 12+ years old, by drug type, numbers in thousands — United States, 2017 (**Table 2d**)
- Self-reported prevalence of substance use disorder for specific substances in the <u>past year</u>, persons 12+ years old, numbers in thousands — United States, 2017 (**Table 2e**)
- Prevalence of self-reported treatment for illicit drug use and prescription drug misuse in the <u>past year</u>, persons 12+ years old, by demographic characteristics, numbers in thousands — United States, 2017 (**Table 2f**)

- Self-reported prevalence of illicit drug use and prescription drug misuse in the <u>past month</u>, persons 12+ years old, numbers in thousands — United States, 2018 (**Table 2g**)
- Self-reported prevalence of illicit drug use and prescription drug misuse in the <u>past year</u>, persons 12+ years old, numbers in thousands — United States, 2018 (**Table 2h**)
- Self-reported prevalence of any prescription drug use (including misuse) in the <u>past year</u>, persons 12+ years old, by drug type, numbers in thousands — United States, 2018 (**Table 2i**)
- Self-reported prevalence of <u>past year initiation</u> of illicit drug use and prescription drug misuse, persons 12+ years old, by drug type, numbers in thousands — United States, 2018 (**Table 2j**)
- Self-reported prevalence of substance use disorder for specific substances in the <u>past year</u>, persons 12+ years old, numbers in thousands — United States, 2018 (**Table 2k**)
- Prevalence of self-reported treatment for illicit drug use and prescription drug misuse in the <u>past year</u>, persons 12+ years old, by demographic characteristics, numbers in thousands — United States, 2018 (**Table 2l**)

For more detailed information, please refer to the table footnotes and the technical notes.

Illicit Drug Use and Prescription Drug Misuse

Estimated prevalence of <u>past year</u> use of illicit drugs includes use of marijuana, cocaine (including crack), heroin, hallucinogens, inhalants, or methamphetamine. Prescription drug misuse includes misuse of prescription psychotherapeutics (i.e., prescription pain relievers, stimulants, sedatives, tranquilizers, and benzodiazepines). Use of "marijuana" was specifically asked in the survey instead of use of "cannabis," therefore we use the term "marijuana" in this section, and "cannabis" elsewhere. In SAMHSA's published report of 2018 data, different age categorizations were included in comparison to the 2017 data. Therefore, some age categorizations differed between the 2017 and 2018 data tables, and in the text below, some age categorizations may not reflect the age categorizations in **Table 2h**.

- During 2017, an estimated 51,795,000 persons, or 19.0% of persons aged 12 years and older, reported use of illicit drugs or misuse of prescription drugs in the past year. (**Table 2b**).
  – By gender, prevalence was 22.0% among males and 16.2% among females.
  – By age, prevalence was highest among persons aged 18-25 years (39.4%) and persons aged 26-34 years (28.7%).
  – By race/ethnicity, prevalence ranged from 9.5% among non-Hispanic Asians to 29.3% among non-Hispanic American Indians or Alaska Natives.
  – By U.S. census region of residence, prevalence ranged from 16.6% in the South to 23.4% in the West.
  – By county type and urbanization, prevalence ranged from 14.2% of persons in non-metropolitan, completely rural counties to 19.9% of persons in large metropolitan counties.
- During 2018, an estimated 53,182,000 persons, or 19.4% of persons aged 12 years and older, reported use of illicit drugs or misuse of prescription drugs in the past year (**Table 2h**).
  – By gender, prevalence was 22.0% among males and 17.0% among females.
  – By age, prevalence was highest among persons aged 18-25 years (38.7%) and persons aged 26-29 years (34.3%).
  – By race/ethnicity, prevalence ranged from 11.2% among non-Hispanic Asians to 28.5% among non-Hispanic American Indians or Alaska Natives.
  – By U.S. census region of residence, prevalence ranged from 16.7% in the South to 23.7% in the West.
  – By county type and urbanization, prevalence ranged from 12.5% of persons in non-metropolitan, completely rural counties to 20.2% of persons in large metropolitan counties.

Opioids

Prevalence of opioid use includes use of heroin and misuse of prescription pain relievers (e.g., oxycodone, hydrocodone). Estimates are provided for the prevalence of <u>past year</u> opioid misuse (includes heroin use and prescription pain reliever misuse) and substance use disorder. Estimates are provided for the prevalence of <u>past year</u> use and misuse, initiation, and substance use disorder for heroin and prescription pain relievers.

- In 2017, an estimated 11,401,000, or 4.2% of persons aged 12 years and older, reported opioid misuse in the past year (**Table 2b**).
  – By gender, reported opioid misuse was 4.7% among males and 3.7% among females.
  – By age, reported opioid misuse was highest among persons aged 18–25 years (7.3%) and persons aged 26-34 years (6.2%).
  – By race/ethnicity, reported opioid misuse ranged from 1.9% among non-Hispanic Asians to 6.1% among non-Hispanic American Indians or Alaska Natives.
  – By U.S. census region of residence, reported opioid misuse ranged from 3.8% in the Northeast to 4.4% in the Midwest and West.
  – By county type and urbanization, reported opioid misuse ranged from 3.9% in non-metropolitan, urbanized counties to 4.5% in small metropolitan counties.
- In 2017, an estimated 2,110,000, or 0.8% of persons aged 12 years and older, reported opioid use disorder in the past year (**Table 2e**).
- In 2018, an estimated 10,250,000, or 3.7% of persons aged 12 years and older, reported opioid misuse

in the past year (**Table 2h**).
  – By gender, reported opioid misuse was 4.0% among males and 3.5% among females.
  – By age, reported opioid misuse was highest among persons aged 30–34 years (5.9%) and persons aged 18-25 years (5.6%).
  – By race/ethnicity, reported opioid misuse ranged from 1.4% among non-Hispanic Asians to 8.4% among non-Hispanic Native Hawaiian or other Pacific Islander.
  – By U.S. census region of residence, reported opioid misuse ranged from 3.1% in the Northeast to 4.0% in the South and West.
  – By county type and urbanization, reported opioid misuse ranged from 3.5% in large metropolitan counties to 4.1% in small metropolitan counties.
- In 2018, an estimated 2,028,000, or 0.7% of persons aged 12 years and older, reported opioid use disorder involving opioid misuse in the past year (**Table 2k**).

Heroin

- In 2017, an estimated 886,000, or 0.3% of persons aged 12 years and older, reported heroin use in the past year (**Table 2b**).
  – By gender, reported heroin use was 0.5% among males and 0.2% among females.
  – By age, reported heroin use was highest among persons aged 26–34 years (0.8%) and persons aged 18-25 years and 35-39 years (both 0.6%).
  – By race/ethnicity, reported heroin use ranged from <0.05% among non-Hispanic Native Hawaiians or Other Pacific Islanders to 0.7% among non-Hispanic American Indians or Alaska Natives.
  – By U.S. census region of residence, reported heroin use ranged from 0.2% in the West to 0.5% in the Northeast.
  – By county type and urbanization, reported heroin use ranged from 0.1% in non-metropolitan, completely rural counties to 0.4% in small metropolitan counties.
- In 2017, an estimated 81,000 persons, or < 0.05% of persons aged 12 years and older, reported initiation of heroin in the past year (**Table 2d**).
- In 2017, an estimated 652,000 persons, or 0.2% of persons aged 12 years and older, reported a substance use disorder in the past year involving heroin (**Table 2e**).

- In 2018, an estimated 808,000, or 0.3% of persons aged 12 years and older, reported heroin use in the past year (**Table 2h**).
  – By gender, reported heroin use was 0.4% among males and 0.2% among females.
  – By age, reported heroin use was highest among persons aged 26-34 years (0.6%) and persons aged 18-25 years and 35-39 years (both 0.5%).
  – By race/ethnicity, reported heroin use ranged from <0.05% among non-Hispanic Asians to 0.4% among non-Hispanic Blacks.
  – By U.S. census region of residence, reported heroin use ranged from 0.2% in the South to 0.5% in the Northeast.
  – By county type and urbanization, reported heroin use ranged from <0.05% in non-metropolitan, completely rural counties to 0.3% in all other classifications of counties.
- In 2018, an estimated 117,000 persons, or < 0.05% of persons aged 12 years and older, reported initiation of heroin in the past year (**Table 2j**).
- In 2018, an estimated 526,000 persons, or 0.2% of persons aged 12 years and older, reported a substance use disorder in the past year involving heroin (**Table 2k**).

Prescription pain relievers (e.g., oxycodone, hydrocodone)

- In 2017, an estimated 11,077,000, or 4.1% of persons aged 12 years and older, reported misuse of prescription pain relievers in the past year (**Table 2b**).
  – By gender, reported misuse of prescription pain relievers was 4.6% among males and 3.6% among

          females.
- By age, reported misuse of prescription pain relievers was highest among persons aged 18–25 years (7.2%) and persons aged 26-34 years (6.0%).
- By race/ethnicity, reported misuse of prescription pain relievers ranged from 1.8% among non-Hispanic Asians to 5.7% among non-Hispanic American Indians or Alaska Natives.
- By U.S. census region of residence, reported misuse of prescription pain relievers ranged from 3.6% in the Northeast to 4.4% in the West.
- By county type and urbanization, reported misuse of prescription pain relievers ranged from 3.9% in both large metropolitan and non-metropolitan, urbanized counties to 4.3% in both small metropolitan and non-metropolitan, completely rural counties.
- In 2017, an estimated 2,010,000, or 0.7% of persons aged 12 years and older, reported initiation of prescription pain reliever misuse in the past year (**Table 2d)**.
- In 2017, an estimated 1,678,000, or 0.6% of persons aged 12 years and older, reported a substance use disorder in the past year involving misuse of prescription pain relievers (**Table 2e**).

- In 2018, an estimated 9,948,000, or 3.6% of persons aged 12 years and older, reported misuse of prescription pain relievers in the past year (**Table 2h**).
- By gender, reported misuse of prescription pain relievers was 3.9% among males and 3.4% among females.
- By age, reported misuse of prescription pain relievers was highest among persons aged 30-34 years (5.6%) and persons aged 18–25 years (5.5%).
- By race/ethnicity, reported misuse of prescription pain relievers ranged from 1.4% among non-Hispanic Asians to 8.4% among non-Hispanic Native Hawaiian or other Pacific Islander.
- By U.S. census region of residence, reported misuse of prescription pain relievers ranged from 2.9% in the Northeast to 3.9% in the South and the West.
- By county type and urbanization, reported misuse of prescription pain relievers ranged from 3.4% in large metropolitan counties to 4.0% in small metropolitan counties.
- In 2018, an estimated 1,908,000, or 0.7% of persons aged 12 years and older, reported initiation of prescription pain reliever misuse in the past year (**Table 2j**).
- In 2018, an estimated 1,694,000, or 0.6% of persons aged 12 years and older, reported a substance use disorder in the past year involving misuse of prescription pain relievers (**Table 2k**).

Stimulants

Estimated prevalence includes use of cocaine and methamphetamine and misuse of prescription stimulants. Estimates are provided for the prevalence of past year use and misuse, initiation, and substance use disorder for these three types of stimulants.

Cocaine

- In 2017, an estimated 5,943,000, or 2.2% of persons aged 12 years and older, reported cocaine use in the past year (**Table 2b**).
- By gender, reported cocaine use was 3.0% among males and 1.4% among females.
- By age, reported cocaine use was highest among persons aged 18–25 years (6.2%) and persons aged 26-34 years (4.5%).
- By race/ethnicity, reported cocaine use ranged from 0.9% among non-Hispanic Asians to 3.6% among non-Hispanic American Indians or Alaskan Natives.
- By U.S. census region of residence, reported cocaine use ranged from 1.9% in the South to 2.6% in the West.
- By county type and urbanization, reported cocaine use ranged from 1.0% in non-metropolitan, completely rural counties to 2.4% in large metropolitan counties.
- In 2017, an estimated 1,037,000, or 0.4% of persons aged 12 years and older, reported initiation of

cocaine use in the past year (**Table 2d**).
- In 2017, an estimated 966,000, or 0.4% of persons aged 12 years and older, reported a substance use disorder in the past year involving cocaine (**Table 2e**).

- In 2018, an estimated 5,529,000, or 2.0% of persons aged 12 years and older, reported cocaine use in the past year (**Table 2h**).
    – By gender, reported cocaine use was 2.6% among males and 1.5% among females.
    – By age, reported cocaine use was highest among persons aged 26–29 years (6.0%) and persons aged 18-25 years (5.8%).
    – By race/ethnicity, reported cocaine use ranged from 1.4% among non-Hispanic Asians to 2.1% among non-Hispanic Whites.
    – By U.S. census region of residence, reported cocaine use ranged from 1.6% in the South to 2.7% in the West.
    – By county type and urbanization, reported cocaine use ranged from 0.7% in non-metropolitan, completely rural counties to 2.3% in large metropolitan counties.
- In 2018, an estimated 874,000 or 0.3% of persons aged 12 years and older, reported initiation of cocaine use in the past year (**Table 2j**).
- In 2018, an estimated 977,000 or 0.4% of persons aged 12 years and older, reported a substance use disorder in the past year involving cocaine (**Table 2k**).

Methamphetamine

- In 2017, an estimated 1,633,000, or 0.6% of persons aged 12 years and older, reported methamphetamine use in the past year (**Table 2b**).
    – By gender, reported methamphetamine use was 0.8% among males and 0.4% among females.
    – By age, reported methamphetamine use was highest among persons aged 35–39 years (1.2%), and persons aged 18-25 years and 26-34 years (1.1% in both).
    – By race/ethnicity, reported methamphetamine use ranged from 0.1% among non-Hispanic Asians to 4.3% among non-Hispanic American Indians or Alaskan Natives.
    – By U.S. census region of residence, reported methamphetamine use ranged from 0.2% in the Northeast to 0.9% in the West.
    – By county type and urbanization, reported methamphetamine use ranged from 0.4% in large metropolitan to 1.1% in both non-metropolitan, less urbanized and non-metropolitan, completely rural counties.
- In 2017, an estimated 195,000, or 0.1% of persons aged 12 years and older, reported initiation of methamphetamine use in the past year (**Table 2d**).
- In 2017, an estimated 964,000, or 0.4% of persons aged 12 years and older, reported a substance use disorder in the past year involving methamphetamines (**Table 2e**).

- In 2018, an estimated 1,867,000, or 0.7% of persons aged 12 years and older, reported methamphetamine use in the past year (**Table 2h**).
    – By gender, reported methamphetamine use was 0.8% among males and 0.5% among females.
    – By age, reported methamphetamine use was highest among persons aged 30–34 years (1.6%), and persons aged 26-29 years (1.2%), and 35-39 years (1.1%).
    – By race/ethnicity, reported methamphetamine use ranged from 0.2% among non-Hispanic Asians and among non-Hispanic Blacks to 2.4% among non-Hispanic American Indians or Alaskan Natives.
    – By U.S. census region of residence, reported methamphetamine use ranged from 0.3% in the Northeast to 1.1% in the West.
    – By county type and urbanization, reported methamphetamine use ranged from 0.6% in large metropolitan to 1.0% in non-metropolitan, less urbanized counties.
- In 2018, an estimated 205,000, or 0.1% of persons aged 12 years and older, reported initiation of

methamphetamine use in the past year (**Table 2j**).

- In 2018, an estimated 1,051,000, or 0.4% of persons aged 12 years and older, reported a substance use disorder in the past year involving methamphetamines (**Table 2k**).

Prescription Stimulants

- In 2017, an estimated 5,839,000, or 2.1% of persons aged 12 years and older, reported misuse of prescription stimulants in the past year (**Table 2b**).
  - By gender, reported misuse of prescription stimulants was 2.6% among males and 1.7% among females.
  - By age, reported misuse of prescription stimulants was highest among persons aged 18-25 years (7.4%) and persons aged 26-34 years (4.1%).
  - By race/ethnicity, reported misuse of prescription stimulants ranged from 0.8% among non-Hispanic Blacks to 2.6% among non-Hispanic Whites.
  - By U.S. census region of residence, reported misuse of prescription stimulants ranged from 1.8% in the West to 2.8% in the Midwest.
  - By county type and urbanization, reported misuse of prescription stimulants ranged from 1.4% in non-metropolitan, less urbanized counties to 2.3% in large metropolitan counties.
- In 2017, an estimated 1,192,000, or 0.4% of persons aged 12 years and older, reported initiation of prescription stimulant misuse in the past year (**Table 2d**).
- In 2017, an estimated 572,000, or 0.2% of persons aged 12 years and older, reported a substance use disorder in the past year involving prescription stimulants (**Table 2e**).

- In 2018, an estimated 5,109,000, or 1.9% of persons aged 12 years and older, reported misuse of prescription stimulants in the past year (**Table 2h**).
  - By gender, reported misuse of prescription stimulants was 2.1% among males and 1.6% among females.
  - By age, reported misuse of prescription stimulants was highest among persons aged 18-25 years (6.5%), followed by persons aged 26-29 years (4.4%) and persons aged 30-34 years (3.4%).
  - By race/ethnicity, reported misuse of prescription stimulants ranged from 0.9% among non-Hispanic Blacks to 2.2% among non-Hispanic Whites.
  - By U.S. census region of residence, reported misuse of prescription stimulants ranged from 1.6% in the South to 2.2% in the Northeast.
  - By county type and urbanization, reported misuse of prescription stimulants ranged from 0.9% in non-metropolitan, completely rural counties to 2.0% in small metropolitan counties.
- In 2018, an estimated 1,001,000, or 0.4% of persons aged 12 years and older, reported initiation of prescription stimulant misuse in the past year (**Table 2j**).
- In 2018, an estimated 561,000, or 0.2% of persons aged 12 years and older, reported a substance use disorder in the past year involving prescription stimulants (**Table 2k**).

Other Drugs

Estimated prevalence for use of other drugs includes marijuana use and misuse of prescription tranquilizers, sedatives, and benzodiazepines. Estimates are provided for the prevalence of past year use and misuse, initiation, and substance use disorder for these three types of drug classes.

Marijuana

- In 2017, an estimated 40,935,000, or 15% of persons aged 12 years and older, reported use of marijuana in the past year (**Table 2b**).
  - By gender, reported marijuana use was 17.8% among males and 12.5% among females.
  - By age, reported use of marijuana was highest among persons aged 18-25 years (34.9%) and persons

aged 26-34 years (23.4%).
  – By race/ethnicity, reported use of marijuana ranged from 6.9% among non-Hispanic Asians to 24.3% among non-Hispanic American Indian or Alaska Natives.
  – By U.S. census region of residence, reported use of marijuana ranged from 12.7% in the South to 19.2% in the West.
  – By county type and urbanization, reported use of marijuana ranged from 10.0% in non-metropolitan, completely rural counties to 15.9% in large metropolitan counties.
- In 2017, an estimated 3,033,000, or 1.1% of persons aged 12 years and older, reported initiation of marijuana in the past year (**Table 2d**).
- In 2017, an estimated 4,057,000, or 1.5% of persons aged 12 years and older, reported a substance use disorder in the past year involving marijuana (**Table 2e**).

- In 2018, an estimated 43,486,000, or 15.9% of persons aged 12 years and older, reported use of marijuana in the past year (**Table 2h**).
  – By gender, reported marijuana use was 18.5% among males and 13.4% among females.
  – By age, reported use of marijuana was highest among persons aged 18-25 years (34.8%) and persons aged 26-34 years (29.6%).
  – By race/ethnicity, reported use of marijuana ranged from 8.9% among non-Hispanic Asians to 23.0% among non-Hispanic American Indian or Alaska Natives.
  – By U.S. census region of residence, reported use of marijuana ranged from 13.0% in the South to 20.2% in the West.
  – By county type and urbanization, reported use of marijuana ranged from 9.5% in non-metropolitan, completely rural counties to 16.8% in large metropolitan counties.
- In 2018, an estimated 3,061,000, or 1.1% of persons aged 12 years and older, reported initiation of marijuana in the past year (**Table 2j**).
- In 2018, an estimated 4,421,000, or 1.6% of persons aged 12 years and older, reported a substance use disorder in the past year involving marijuana (**Table 2k**).

Prescription Tranquilizers

- In 2017, an estimated 5,944,000, or 2.2% of persons aged 12 years and older, reported misuse of prescription tranquilizers in the past year (**Table 2b**).
  – By gender, reported misuse of prescription tranquilizers was 2.3% among males and 2.1% among females.
  – By age, reported misuse of prescription tranquilizers was highest among persons aged 18-25 years (5.5%) and persons aged 26–34 years (3.4%).
  – By race/ethnicity, reported misuse of prescription tranquilizers ranged from 0.7% among non-Hispanic Asians to 2.6% among non-Hispanic Whites.
  – By U.S. census region of residence, reported misuse of prescription tranquilizers ranged from 1.9% in the West to 2.4% in the Midwest.
  – By county type and urbanization, reported misuse of prescription tranquilizers ranged from 1.9% in both non-metropolitan, completely rural and non-metropolitan, urbanized counties to 2.2% in both large metropolitan and small metropolitan counties.
- In 2017, an estimated 1,446,000, or 0.5% of persons aged 12 years and older, reported initiation of prescription tranquilizer misuse in the past year (**Table 2d**).
- In 2017, an estimated 739,000, or 0.3% of persons aged 12 years and older, reported a substance use disorder in the past year involving prescription tranquilizers (**Table 2e**).

- In 2018, an estimated 5,742,000, or 2.1% of persons aged 12 years and older, reported misuse of prescription tranquilizers in the past year (**Table 2h**).
  – By gender, reported misuse of prescription tranquilizers was 2.2% among males and 2.0% among females.
  – By age, reported misuse of prescription tranquilizers was highest among persons aged 18-25 years

(4.6%), followed by persons aged 26–29 years (3.9%) and persons aged 30- 34 years (3.3%).
- – By race/ethnicity, reported misuse of prescription tranquilizers ranged from 0.7% among non-Hispanic Asians to 2.4% among both non-Hispanic whites and non-Hispanic American Indian or Alaska Natives.
- – By U.S. census region of residence, reported misuse of prescription tranquilizers was nearly uniform, with 2.1% in the South, West, and Northeast and 2.2% in the Midwest.
- – By county type and urbanization, reported misuse of prescription tranquilizers ranged from 0.8% in non-metropolitan, completely rural counties to 2.3% in large metropolitan counties.
- • In 2018, an estimated 1,210,000, or 0.4% of persons aged 12 years and older, reported initiation of prescription tranquilizer misuse in the past year (**Table 2j**).
- • In 2018, an estimated 673,000, or 0.2% of persons aged 12 years and older, reported a   substance use disorder in the past year involving prescription tranquilizers (**Table 2k**).

Prescription Sedatives

- • In 2017, an estimated 1,351,000, or 0.5% of persons aged 12 years and older, reported misuse of prescription sedatives in the past year (**Table 2b**).
  - – By gender, reported misuse of prescription sedatives was 0.5% among males and 0.5% among females.
  - – By age, reported misuse of prescription sedatives was highest among persons aged 50-54 years (1.0%) and persons aged 55-59 years and 60-64 years (both 0.7%).
  - – By race/ethnicity, reported misuse of prescription sedatives ranged from 0.1% among non-Hispanic Asians to 0.6% among non-Hispanic Whites.
  - – By U.S. census region of residence, reported misuse of prescription sedatives ranged from 0.4% in the Northeast and Midwest to 0.6% in the West.
  - – By county type and urbanization, reported misuse of prescription sedatives ranged from 0.3% in non-metropolitan, urbanized counties to 0.9% in non-metropolitan, completely rural counties.
- • In 2017, an estimated 271,000, or 0.1% of persons aged 12 years and older, reported initiation of prescription sedative misuse in the past year (**Table 2d**).
- • In 2017, an estimated 198,000, or 0.1% of persons aged 12 years and older, reported a substance use disorder in the past year involving prescription sedatives (**Table 2e**).

- • In 2018, an estimated 1,084,000, or 0.4% of persons aged 12 years and older, reported misuse of prescription sedatives in the past year (**Table 2h**).
  - – By gender, reported misuse of prescription sedatives was 0.5% among males and 0.3% among females.
  - – By age group, reported misuse of prescription sedatives was highest at 0.6% among persons aged 18-25, 26-29, 30-34, and 35-39 years.
  - – By race/ethnicity, reported misuse of prescription sedatives ranged from 0.1% among both non-Hispanic Blacks and non-Hispanic Asians to 0.9% among non-Hispanic American Indian or Alaska Natives.
  - – By U.S. census region of residence, reported misuse of prescription sedatives ranged from 0.3% in the South to 0.5% in the West.
  - – By county type and urbanization, reported misuse of prescription sedatives ranged from 0.3% in small metropolitan counties to 0.6% in non-metropolitan, urbanized counties.
- • In 2018, an estimated 251,000, or 0.1% of persons aged 12 years and older, reported initiation of prescription sedative misuse in the past year (**Table 2j**).
- • In 2018, an estimated 113,000, or <0.05% of persons aged 12 years and older, reported a substance use disorder in the past year involving prescription sedatives (**Table 2k**).

Prescription Benzodiazepines

- • In 2017, an estimated 5,674,000, or 2.1% of persons aged 12 years and older, reported misuse of prescription benzodiazepines in the past year (**Table 2b**).
  - – By gender, reported misuse of prescription benzodiazepines was 2.2% among males and 2.0% among females.
  - – By age, reported misuse of prescription benzodiazepines was highest among persons aged 18-25

years (5.3%) and 35-39 years (2.0%).
  – By race/ethnicity, reported misuse of prescription benzodiazepines ranged from 0.7% among non-Hispanic Asians to 2.5% among non-Hispanic Whites.
  – By U.S. census region of residence, reported misuse of prescription benzodiazepines ranged from 1.7% in the West to 2.3% in the Midwest.
  – By county type and urbanization, reported misuse of prescription benzodiazepines ranged from 1.7% in non-metropolitan, completely rural counties to 2.1% in large metropolitan counties, small metropolitan counties, and non-metropolitan less urbanized counties.

- In 2018, an estimated 5,438,000, or 2.0% of persons aged 12 years and older, reported misuse of prescription benzodiazepines in the past year (**Table 2h**).
  – By gender, reported misuse of prescription benzodiazepines was 2.1% among males and 1.9% among females.
  – By age, reported misuse of prescription benzodiazepines was highest among persons aged 18-25 years (4.5%) and 26-29 years (3.7%).
  – By race/ethnicity, reported misuse of prescription benzodiazepines ranged from 0.7% among non-Hispanic Asians to 2.3% among non-Hispanic Whites.
  – By U.S. census region of residence, reported misuse of prescription benzodiazepines ranged from 1.9% in the South to 2.0% in the Midwest, Northeast, and West.
  – By county type and urbanization, reported misuse of prescription benzodiazepines ranged from 0.8% in non-metropolitan, completely rural counties to 2.2% in large metropolitan counties.

Illicit and Prescription Drug Treatment (**Table 2f** and **2l**)

Illicit and prescription drug treatment refers to treatment received to reduce or stop illicit drug use or prescription drug misuse, or for medical problems associated with illicit drug use or prescription drug misuse in the past year.

Any location

- In 2017, 2,448,000 persons, or 0.9% of persons aged 12 years and older, reported that they had received illicit or prescription drug treatment in the past year at any location, such as a hospital (inpatient), rehabilitation facility (inpatient or outpatient), mental health center, emergency room, private doctor's office, self-help group, or a prison or jail.
  – By gender, 1.2% of males and 0.6% of females reported illicit or prescription drug treatment in the past year.
  – By age, 1.3% of persons aged 18-25 years reported illicit or prescription drug treatment in the past year.

- In 2018, 2,097,000 persons, or 0.8% of persons aged 12 years and older, reported that they had received illicit or prescription drug treatment in the past year at any location, such as a hospital (inpatient), rehabilitation facility (inpatient or outpatient), mental health center, emergency room, private doctor's office, self-help group, or a prison or jail.
  – By gender, 0.9% of males and 0.6% of females reported illicit or prescription drug treatment in the past year.
  – By age, 0.9% of persons aged 18-25 years reported illicit or prescription drug treatment in the past year.

Specialty facility

- In 2017, 1,674,000 persons, or 0.6% of persons aged 12 years and older, reported that they had received illicit or prescription drug treatment in the past year at a specialty facility, which includes a hospital (inpatient only), rehabilitation facility (inpatient or outpatient), or mental health center.
  – By gender, 0.8% of males and 0.5% of females reported illicit or prescription drug treatment at a specialty facility in the past year.
  – By age, 0.9% of persons aged 18-25 years reported illicit or prescription drug treatment at a specialty

facility in the past year.

- In 2018, 1,392,000 persons, or 0.5% of persons aged 12 years and older, reported that they had received illicit or prescription drug treatment in the past year at a specialty facility, which includes a hospital (inpatient only), rehabilitation facility (inpatient or outpatient), or mental health center.
  – By gender, 0.6% of males and 0.4% of females reported illicit or prescription drug treatment at a specialty facility in the past year.
  – By age, 0.6% of persons aged 18-25 years reported illicit or prescription drug treatment at a specialty facility in the past year.

Nonfatal Overdose Hospitalizations and Emergency Department (ED) Visits

This section includes nonfatal emergency department (ED) visits and hospitalizations from poisonings or overdoses stemming from all drugs, opioids, and stimulants. Information on other drug poisoning-related hospitalizations and ED visits (e.g., antidepressants, benzodiazepines, cannabis, etc.) is available from the Healthcare Cost and Utilization Project (HCUP), but not presented in the 2019 surveillance report. Data on nonfatal, drug-related poisonings for all persons in the United States are presented from 2016 data HCUP:

- Estimated numbers and age-adjusted rates per 100,000 population of drug poisoning-related hospitalizations by selected substances, all intents — United States, 2016 (**Table 3a**)
- Estimated numbers and age-adjusted rates per 100,000 population of drug poisoning-related hospitalizations by selected substances, unintentional and undetermined intents — United States, 2016 (**Table 3b**)
- Estimated numbers and age-adjusted rates per 100,000 population of drug poisoning-related emergency department visits by selected substances, all intents — United States, 2016 (**Table 3c**)
- Estimated numbers and age-adjusted rates per 100,000 population of drug poisoning-related emergency department visits by selected substances, unintentional and undetermined intents — United States, 2016 (**Table 3d**)
- Estimated number and percentage of drug poisoning-related hospitalization and emergency department visits by primary payer, all intents — United States, 2016 (**Table 3e**)
- Estimated number and percentage of drug poisoning-related hospitalization and emergency department visits by primary payer, unintentional and undetermined intent — United States, 2016 (**Table 3f**)

The categories of drugs and drug classes in the tables are not mutually exclusive, because poisoning-related hospitalizations and ED visits may involve more than one type of drug, and all diagnosis codes (i.e., not just the primary diagnosis code) were searched for drug-related poisonings. All rates are per 100,000 persons and are age-adjusted, except the rates by age group. For more detailed information, including definitions, please refer to the table footnotes and the technical notes.

Rates of hospitalizations (**Supplemental Tables 2a** and **2b**) and ED visits (**Supplemental Tables 2c** and **2d**) due to nonfatal, drug-related overdoses for 2016 that are not age-adjusted are presented in the Supplemental Tables.

All Drugs

Hospitalizations, all intents

- In 2016, an estimated 326,200 hospitalizations occurred for all drug-related poisonings of all intents in the United States; the age-adjusted rate was 98.1 hospitalizations per 100,000 population (**Table 3a**).
    - By sex, the rate was 89.3 among males and 106.8 among females.
    - By age, rates were highest among persons aged 45-54 years (135.6) and persons aged 55-64 years (129.7).
- By region, hospitalization rates for all drug-related poisonings of all intents ranged from 79.1 in the West to 113.0 in the Midwest (**Table 3a**).
- By urbanization, hospitalization rates for all drug-related poisonings of all intents ranged from 90.2 in large fringe metropolitan counties to 113.4 in small metropolitan counties (**Table 3a**).

Hospitalizations, unintentional and undetermined intents

- In 2016, an estimated 193,150 hospitalizations occurred for all drug-related poisonings of unintentional and undetermined intent in the United States; the age-adjusted rate was 56.2 hospitalizations per 100,000 population (**Table 3b**).
  – By sex, the rate was 58.9 among males and 53.2 among females.
  – By age, rates were highest among persons aged 55–64 years (93.7) and persons aged ≥ 65 years (91.6).
- By region, hospitalization rates for all drug-related poisonings of unintentional and undetermined intent ranged from 46.2 in the West to 60.5 in the South (**Table 3b**).
- By urbanization, hospitalization rates for all drug-related poisonings of unintentional and undetermined intent ranged from 50.3 in noncore counties to 59.5 in medium metropolitan counties (**Table 3b**).

Emergency department (ED) visits, all intents

- In 2016, an estimated 577,794 ED visits occurred for all drug-related poisonings of all intents in the United States; the age-adjusted rate was 183.2 visits per 100,000 population (**Table 3c**).
  – By sex, the rate was 184.2 among males and 182.4 among females.
  – By age, rates were highest among persons aged 20–24 years (304.5) and persons aged 15-19 years (299.4).
- By region, ED visit rates for all drug-related poisonings of all intents ranged from 156.0 in the West to 228.6 in the Midwest (**Table 3c**).
- By urbanization, ED visit rates for all drug-related poisonings of all intents ranged from 159.7 in large central metropolitan counties to 225.2 in micropolitan counties (**Table 3c**).

Emergency department (ED) visits, unintentional and undetermined intents

- In 2016, an estimated 435,983 ED visits occurred for all drug-related poisonings of unintentional and undetermined intent in the United States; the age-adjusted rate was 137.2 visits per 100,000 population (**Table 3d**).
  – By sex, the rate was 154.1 among males and 120.0 among females.
  – By age, rates were highest among persons aged 25-34 years (238.1) and persons aged 20-24 years (219.3).
- By region, ED visit rates for all drug-related poisonings of unintentional and undetermined intent ranged from 103.8 in the West to 170.8 in the Midwest (**Table 3d**).
- By urbanization, ED visit rates for all drug-related poisonings of unintentional and undetermined intent ranged from 116.0 in large central metropolitan counties to 161.6 in micropolitan counties (**Table 3d**).

Opioids

All Opioids

Hospitalizations, all intents

- In 2016, an estimated 91,840 hospitalizations occurred for opioid-related poisonings of all intents in the United States; the age-adjusted rate was 26.6 hospitalizations per 100,000 population (**Table 3a**).
  – By sex, the rate was 26.7 among males and 26.3 among females.
  – By age, rates were highest among persons aged 55-64 years (48.7) and persons aged 45-54 years (40.0).
- By region, hospitalization rates for opioid-related poisonings of all intents ranged from 21.3 in the West to 30.0 in the Midwest (**Table 3a**).
- By urbanization, hospitalization rates for opioid-related poisonings of all intents ranged from 22.8 in noncore counties to 29.9 in medium metropolitan counties (**Table 3a**).

Hospitalizations, unintentional, and undetermined intents

- In 2016, an estimated 73,650 hospitalizations occurred for opioid-related poisonings of unintentional and undetermined intent in the United States; the age-adjusted rate was 21.1 hospitalizations per 100,000 population (**Table 3b**).
  - By sex, the rate was 22.0 among males and 19.9 among females.
  - By age, rates were highest among persons aged 55-64 years (41.3) and persons aged ≥ 65 years (31.6).
- By region, hospitalization rates for opioid-related poisonings of unintentional and undetermined intent ranged from 16.9 in the West to 23.1 in the Midwest (**Table 3b**).
- By urbanization, hospitalization rates for opioid-related poisonings of unintentional and undetermined intent ranged from 17.7 in noncore counties to 23.1 in medium metropolitan counties (**Table 3b**).

Emergency department visits, all intents

- In 2016, an estimated 197,970 ED visits occurred for opioid-related poisonings of all intents in the United States; the age-adjusted rate was 62.0 visits per 100,000 population (**Table 3c**).
  - By sex, the rate was 78.2 among males and 45.7 among females.
  - By age, rates were highest among persons aged 25–34 years (160.8) and persons aged 20–24 years (131.1).
- By region, ED visit rates for opioid-related poisonings of all intents ranged from 33.1 in the West to 89.8 in the Northeast (**Table 3c**).
- By urbanization, ED visit rates for opioid-related poisonings of all intents ranged from 40.6 in noncore counties to 79.3 in medium metropolitan counties (**Table 3c**).

Emergency department visits, unintentional and undetermined intents

- In 2016, an estimated 183,147 ED visits occurred for opioid-related poisonings of unintentional and undetermined intents in the United States; the age-adjusted rate was 57.3 visits per 100,000 population (**Table 3d**).
  - By sex, the rate was 73.9 among males and 40.5 among females.
  - By age, rates were highest among persons aged 25–34 years (152.1) and persons aged 20–24 years (121.8).
- By region, ED visit rates for opioid-related poisonings of unintentional and undetermined intents ranged from 27.9 in the West to 86.4 in the Northeast (**Table 3d**).
- By urbanization, ED visit rates for opioid-related poisonings of unintentional and undetermined intents ranged from 35.1 in noncore counties to 73.2 in medium metropolitan counties (**Table 3d**).

Heroin

Hospitalizations, all intents

- In 2016, an estimated 22,360 hospitalizations occurred for heroin-related poisonings of all intents in the United States; the age-adjusted rate was 7.0 hospitalizations per 100,000 population (**Table 3a**).
  - By sex, the rate was 9.7 among males and 4.3 among females.
  - By age, rates were highest among persons aged 25-34 years (17.9) and persons aged 20-24 years (15.2).
- By region, hospitalization rates for heroin-related poisonings of all intents ranged from 3.6 in the West to 11.5 in the Northeast (**Table 3a**).
- By urbanization, hospitalization rates for heroin-related poisonings of all intents ranged from 2.5 in noncore counties to 8.7 in large fringe metropolitan counties (**Table 3a**).

Hospitalizations, unintentional and undetermined intents

- In 2016, an estimated 19,325 hospitalizations occurred for heroin-related poisonings of unintentional and undetermined intent in the United States; the age-adjusted rate was 6.0 hospitalizations per 100,000

population (**Table 3b**).
  – By sex, the rate was 8.4 among males and 3.6 among females.
  – By age, rates were highest among persons aged 25-34 years (15.2) and persons aged 20-24 years (13.4).
- By region, hospitalization rates for heroin-related poisonings of unintentional and undetermined intent ranged from 3.1 in the West to 10.0 in the Northeast (**Table 3b**).
- By urbanization, hospitalization rates for heroin-related poisonings of unintentional and undetermined intent ranged from 2.3 in noncore counties to 7.5 in large fringe metropolitan counties (**Table 3b**).

Emergency department (ED) visits, all intents

- In 2016, an estimated 123,272 ED visits occurred for heroin-related poisonings of all intents in the United States; the age-adjusted rate was 39.1 visits per 100,000 population (**Table 3c**).
  – By sex, the rate was 53.3 among males and 24.9 among females.
  – By age, rates were highest among persons aged 25-34 years (119.0) and persons aged 20-24 years (96.5).
- By region, ED visit rates for heroin-related poisonings of all intents ranged from 14.2 in the West to 64.7 in the Northeast (**Table 3c**).
- By urbanization, ED visit rates for heroin-related poisonings of all intents ranged from 17.7 in noncore counties to 52.8 in medium metropolitan counties (**Table 3c**).

Emergency department (ED) visits, unintentional and undetermined intents

- In 2016, an estimated 119,465 ED visits occurred for heroin-related poisonings of unintentional and undetermined intent in the United States; the age-adjusted rate was 37.9 visits per 100,000 population (**Table 3d**).
  – By sex, the rate was 51.6 among males and 24.1 among females.
  – By age, rates were highest among persons aged 25-34 years (115.5) and persons aged 20-24 years (93.4).
- By region, ED visit rates for heroin-related poisonings of unintentional and undetermined intent ranged from 13.5 in the West to 63.1 in the Northeast (**Table 3d**).
- By urbanization, ED visit rates for heroin-related poisonings of unintentional and undetermined intent ranged from 16.7 in noncore counties to 50.9 in medium metropolitan counties (**Table 3d**).

Methadone

Hospitalizations, all intents

- In 2016, an estimated 5,675 hospitalizations occurred for methadone-related poisonings of all intents in the United States; the age-adjusted rate was 1.6 hospitalizations per 100,000 population (**Table 3a**).
  – By sex, the rate was 1.7 among males and 1.6 among females.
  – By age, rates were highest among persons aged 55-64 years (3.5) and persons aged 45-54 years (2.8).
- By region, hospitalization rates for methadone-related poisonings of all intents ranged from 1.5 in the West to 2.0 in the Northeast (**Table 3a**).
- By urbanization, hospitalization rates for methadone-related poisonings of all intents ranged from 1.3 in both large fringe metropolitan and micropolitan counties to 2.0 in noncore counties (**Table 3a**).

Hospitalizations, unintentional and undetermined intents

- In 2016, an estimated 4,810 hospitalizations occurred for methadone-related poisonings of unintentional and undetermined intent in the United States; the age-adjusted rate was 1.4 hospitalizations per 100,000 population (**Table 3b**).
  – By sex, the rate was 1.5 among males and 1.2 among females.
  – By age, rates were highest among persons aged 55-64 years (3.0) and persons aged 45-54 years (2.4).

- By region, hospitalization rates for methadone-related poisonings of unintentional and undetermined intent ranged from 1.3 in the Midwest, South, and West to 1.7 in the Northeast (**Table 3b**).
- By urbanization, hospitalization rates for methadone-related poisonings of unintentional and undetermined intent ranged from 1.0 in micropolitan counties to 1.7 in large central metropolitan counties (**Table 3b**).

Emergency department (ED) visits, all intents

- In 2016, an estimated 3,434 ED visits occurred for methadone-related poisonings of all intents in the United States; the age-adjusted rate was 1.0 visits per 100,000 population (**Table 3c**).
  – By sex, the rate was 1.1 among males and 1.0 among females.
  – By age, rates were highest among persons aged 25-34 years (1.8) and persons aged 45-54 years (1.6).
- By region, ED visit rates for methadone-related poisonings of all intents ranged from 0.9 in the Midwest to 1.3 in the West (**Table 3c**).
- By urbanization, ED visit rates for methadone-related poisonings of all intents ranged from 0.7 in large fringe metropolitan counties to 1.2 in large central metropolitan and noncore counties (**Table 3c**).

Emergency department (ED) visits, unintentional and undetermined intents

- In 2016, an estimated 3,038 ED visits occurred for methadone-related poisonings of unintentional and undetermined intent in the United States; the age-adjusted rate was 0.9 visits per 100,000 population (**Table 3d**).
  – By sex, the rate was 1.0 among males and 0.8 among females.
  – By age, rates were highest among persons aged 25-34 years (1.6), persons aged 45-54 years (1.4), and persons aged 55-64 years (1.4).
- By region, ED visit rates for methadone-related poisonings of unintentional and undetermined intent ranged from 0.8 in both the Midwest and South to 1.1 in the West (**Table 3d**).
- By urbanization, ED visit rates for methadone-related poisonings of unintentional and undetermined intent ranged from 0.6 in large fringe metropolitan counties to 1.2 in large central metropolitan (**Table 3d**).

Other Opioids (e.g., Unspecified Opioids, Opium)

Hospitalizations, all intents

- In 2016, an estimated 65,110 hospitalizations occurred for poisonings by other opioids of all intents in the United States; the age-adjusted rate was 18.4 hospitalizations per 100,000 population (**Table 3a**).
  – By sex, the rate was 15.8 among males and 20.7 among females.
  – By age, rates were highest among persons aged 55-64 years (40.0) and persons aged ≥ 65 years (32.3).
- By region, hospitalization rates for poisonings by other opioids of all intents ranged from 15.4 in the Northeast to 20.8 in the South (**Table 3a**).
- By urbanization, hospitalization rates for poisonings by other opioids of all intents ranged from 16.3 in large central metropolitan counties to 21.3 in medium metropolitan counties (**Table 3a**).

Hospitalizations, unintentional and undetermined intents

- In 2016, an estimated 50,515 hospitalizations occurred for poisonings by other opioids of unintentional and undetermined intent in the United States; the age-adjusted rate was 14.0 hospitalizations per 100,000 population (**Table 3b**).
  – By sex, the rate was 12.6 among males and 15.2 among females.
  – By age, rates were highest among persons aged 55-64 years (33.5) and persons aged ≥ 65 years (29.1).
- By region, hospitalization rates for poisonings by other opioids of unintentional and undetermined intent ranged from 11.9 in the Northeast to 16.1 in the South (**Table 3b**).

- By urbanization, hospitalization rates for poisonings by other opioids of unintentional and undetermined intent ranged from 12.7 in large central metropolitan counties to 15.8 in medium metropolitan counties (**Table 3b**).

Emergency department (ED) visits, all intents

- In 2016, an estimated 72,065 ED visits occurred for poisonings by other opioids of all intents in the United States; the age-adjusted rate was 22.1 visits per 100,000 population (**Table 3c**).
  – By sex, the rate was 24.2 among males and 19.9 among females.
  – By age, rates were highest among persons aged 25-34 years (40.9) and persons aged 20-24 years (33.9).
- By region, ED visit rates for poisonings by other opioids of all intents ranged from 17.7 in the West to 26.5 in the Midwest (**Table 3c**).
- By urbanization, ED visit rates for poisonings by other opioids of all intents ranged from 17.7 in large central metropolitan counties to 28.2 in micropolitan counties (**Table 3c**).

Emergency department (ED) visits, unintentional and undetermined intents

- In 2016, an estimated 61,318 ED visits occurred for poisonings by other opioids of unintentional and undetermined intents in the United States; the age-adjusted rate was 18.7 visits per 100,000 population (**Table 3d**).
  – By sex, the rate was 21.7 among males and 15.6 among females.
  – By age, rates were highest among persons aged 25-34 years (35.9) and persons aged 20-24 years (27.7).
- By region, ED visit rates for poisonings by other opioids of unintentional and undetermined intents ranged from 13.3 in the West to 22.7 in the Northeast (**Table 3d**).
- By urbanization, ED visit rates for poisonings by other opioids of unintentional and undetermined intents ranged from 14.7 in large central metropolitan counties to 23.4 in micropolitan counties (**Table 3d**).

Stimulants

Cocaine

Hospitalizations, all intents

- In 2016, an estimated 20,090 hospitalizations occurred for cocaine-related poisonings of all intents in the United States; the age-adjusted rate was 6.1 hospitalizations per 100,000 population (**Table 3a**).
  – By sex, the rate was 8.2 among males and 4.1 among females.
  – By age, rates were highest among persons aged 45-54 years (13.1) and persons aged 55-64 years (9.9).
- By region, hospitalization rates for cocaine-related poisonings of all intents ranged from 2.0 in the West to 9.9 in the Northeast (**Table 3a**).
- By urbanization, hospitalization rates for cocaine-related poisonings of all intents ranged from 2.6 in noncore counties to 8.6 in large central metropolitan counties (**Table 3a**).

Hospitalizations, unintentional and undetermined intents

- In 2016, an estimated 17,620 hospitalizations occurred for cocaine-related poisonings of unintentional and undetermined intent in the United States; the age-adjusted rate was 5.3 hospitalizations per 100,000 population (**Table 3b**).
  – By sex, the rate was 7.3 among males and 3.4 among females.
  – By age, rates were highest among persons aged 45-54 years (11.7) and persons aged 55-64 years (9.2).
- By region, hospitalization rates for cocaine-related poisonings of unintentional and undetermined intent ranged from 1.8 in the West to 8.8 in the Northeast (**Table 3b**).
- By urbanization, hospitalization rates for cocaine-related poisonings of unintentional and undetermined intent ranged from 2.2 in noncore counties to 7.8 in large central metropolitan counties (**Table 3b**).

Emergency department (ED) visits, all intents

- In 2016, an estimated 8,617 ED visits occurred for cocaine-related poisonings of all intents in the United States; the age-adjusted rate was 2.7 visits per 100,000 population (**Table 3c**).
  – By sex, the rate was 3.6 among males and 1.9 among females.
  – By age, rates were highest among persons aged 25-34 years (6.3) and persons aged 20-24 years (5.4).
- By region, ED visit rates for cocaine-related poisonings of all intents ranged from 1.5 in the West to 3.4 in the South (**Table 3c**).
- By urbanization, ED visit rates for cocaine-related poisonings of all intents ranged from 1.7 in noncore counties to 3.6 in medium metropolitan counties (**Table 3c**).

Emergency department (ED) visits, unintentional and undetermined intents

- In 2016, an estimated 7,399 ED visits occurred for cocaine-related poisonings of unintentional and undetermined intent in the United States; the age-adjusted rate was 2.4 visits per 100,000 population (**Table 3d**).
  – By sex, the rate was 3.1 among males and 1.6 among females.
  – By age, rates were highest among persons aged 25-34 years (5.5) and persons aged 20-24 years (4.6).
- By region, ED visit rates for cocaine-related poisonings of unintentional and undetermined intent ranged from 1.3 in the West to 3.0 in the Northeast (**Table 3d**).
- By urbanization, ED visit rates for cocaine-related poisonings of unintentional and undetermined intent ranged from 1.3 in noncore counties to 3.0 in medium metropolitan counties (**Table 3d**).

Methamphetamine

Hospitalizations, all intents

- In 2016, an estimated 17,725 hospitalizations occurred for methamphetamine-related poisonings of all intents in the United States; the rate was 5.7 hospitalizations per 100,000 population (**Table 3a**).
  – By sex, the rate was 7.2 among males and 4.1 among females.
  – By age, rates were highest among persons aged 25-34 years (11.6) and persons aged 35-44 years (9.9).
- By region, hospitalization rates for methamphetamine-related poisonings of all intents ranged from 2.3 in the Northeast to 9.0 in the West (**Table 3a**).
- By urbanization, hospitalization rates for methamphetamine-related poisonings of all intents ranged from 4.0 in large fringe metropolitan counties to 7.9 in small metropolitan counties (**Table 3a**).

Hospitalizations, unintentional and undetermined intent

- In 2016, an estimated 14,005 hospitalizations occurred for methamphetamine-related poisonings of unintentional and undetermined intent in the United States; the rate was 4.4 hospitalizations per 100,000 population (**Table 3b**).
  – By sex, the rate was 6.0 among males and 2.9 among females.
  – By age, rates were highest among persons aged 25-34 years (8.9) and persons aged 35-44 years (7.9).
- By region, hospitalization rates for methamphetamine-related poisonings of unintentional and undetermined intent ranged from 1.6 in the Northeast to 7.8 in the West (**Table 3b**).
- By urbanization, hospitalization rates for methamphetamine-related poisonings of unintentional and undetermined intent ranged from 3.0 in large fringe metropolitan counties to 6.0 in small metropolitan counties (**Table 3b**).

Emergency department (ED) visits, all intents

- In 2016, an estimated 16,341 ED visits occurred for methamphetamine-related poisonings of all intents in the United States; the age-adjusted rate was 5.3 visits per 100,000 population (**Table 3c**).

– By sex, the rate was 6.7 among males and 4.0 among females.
– By age, rates were highest among persons aged 25–34 years (11.7) and persons aged 20–24 years (11.2).
• By region, ED visit rates for methamphetamine-related poisonings of all intents ranged from 2.1 in the Northeast to 7.8 in the West (**Table 3c**).
• By urbanization, ED visit rates for methamphetamine-related poisonings of all intents ranged from 3.3 in large fringe metropolitan counties to 8.7 in both micropolitan and noncore counties (**Table 3c**).

Emergency department (ED) visits, unintentional and undetermined intents

• In 2016, an estimated 13,131 ED visits occurred for methamphetamine-related poisonings of unintentional and undetermined intent in the United States; the age-adjusted rate was 4.3 visits per 100,000 population (**Table 3d**).
– By sex, the rate was 5.5 among males and 3.0 among females.
– By age, rates were highest among persons aged 25-34 years (9.4) and persons aged 20-24 years (9.0).
• By region, ED visit rates for methamphetamine-related poisonings of unintentional and undetermined intent ranged from 1.8 in the Northeast to 6.7 in the West (**Table 3d**).
• By urbanization, ED visit rates for methamphetamine-related poisonings of unintentional and undetermined intent ranged from 2.6 in large fringe metropolitan counties to 7.1 in micropolitan counties (**Table 3d**).

Primary Source of Payment for Medically Attended, Nonfatal Drug Overdose, 2016

All intents (**Table 3e**)

• 32.5% of hospitalizations for all drug poisonings of all intents listed Medicaid as the primary source for payment, 29.7% listed Medicare, 23.7% listed private insurance, and 10.4% involved uninsured persons.
• 37.7% of ED visits for all drug poisonings of all intents listed Medicaid as the primary source for payment, 26.5% listed private insurance, 17.6% involved uninsured persons, and 13.9% listed Medicare.

Unintentional and undetermined intents (**Table 3f**)

• 37.8% of hospitalizations for all drug poisonings of unintentional and undetermined intent listed Medicare as the primary source for payment, 30.5% listed Medicaid, 18.5% listed private insurance, and 10.1% involved uninsured persons.
• 38.0% of ED visits for all drug poisonings of unintentional and undetermined intent listed Medicaid as the primary source for payment, 23.7% listed private insurance, 18.7% involved uninsured persons, and 15.4% listed Medicare.

👤 Drug Overdose Mortality

This section includes fatalities from drug overdose as the underlying cause of death for the following drugs: heroin, natural/semisynthetic opioids (e.g., hydrocodone, oxycodone), methadone, synthetic opioids other than methadone (e.g., fentanyl, tramadol), any opioids, cocaine, and psychostimulants with abuse potential (e.g., methamphetamine, dextroamphetamine). Information on other drugs involved in overdose deaths is available within the National Vital Statistics System (NVSS), but not presented in the 2019 surveillance report. CDC's National Center for Health Statistics releases more current provisional monthly data on drug overdose deaths. Given these are provisional counts, we do not include these data in this report. The provisional estimates can be found at: **https://www.cdc.gov/nchs/nvss/vsrr/drug-overdose-data.htm**

Data on drug overdose deaths for all persons in the United States are presented from NVSS:
*   Number and age-adjusted rates per 100,000 population of overall drug overdose deaths and drug overdose deaths involving any type of opioid, by sex, age group, race/ethnicity, census region, urbanization, and intent — United States, 2017 (**Table 4a**)
*   Number and age-adjusted rates per 100,000 population of drug overdose deaths involving selected opioids by sex, age group, race/ethnicity, census region, urbanization, and intent — United States, 2017 (**Table 4b**)
*   Number and age-adjusted rates per 100,000 population of drug overdose deaths involving cocaine and other psychostimulants with abuse potential by sex, age group, race/ethnicity, census region, urbanization, and intent — United States, 2017 (**Table 4c**)
*   Age-adjusted rates per 100,000 population of drug overdose deaths and drug overdose deaths involving any opioid for all intents and for unintentional intent by year — United States, 1999-2017 (**Figure 2a**)
*   Age-adjusted rates per 100,000 population of drug overdose deaths by drug or drug class and year — United States, 1999–2017 (**Figure 2b**)
*   Rates per 100,000 population of drug overdose deaths by drug or drug class and age category — United States, 2017 (**Figure 2c**)
*   Age-adjusted rates per 100,000 population of drug overdose deaths by state — United States, 2017 (**Figure 2d**)

Rates are calculated per 100,000 persons age-adjusted to the 2000 U.S. standard population using the vintage year population of the data year (excluding those for age group, which are not adjusted and are per 100,000 persons). For more detailed information, including definitions, please refer to table footnotes and the technical notes.

Data supporting Figures 2a-2d are presented in Supplemental Tables.

All Drug Overdose Deaths (**Table 4a**)
*   In 2017, 70,237 persons in the United States died from drug overdoses; the age-adjusted rate was 21.7 deaths per 100,000 persons.
    – By sex, the rate was 29.1 among males and 14.4 among females.
    – By age, rates were highest among persons aged 35-44 years (39.0), persons aged 25-34 years (38.4), and persons aged 45-54 years (37.7).
    – By race/ethnicity, rates ranged from 3.5 among non-Hispanic Asians/Pacific Islanders to 27.5 among non-Hispanic Whites.
    – By region, age-adjusted death rates from drug overdose ranged from 14.7 in the West to 29.8 in the Northeast.

– By urbanization, age-adjusted death rates from drug overdose ranged from 18.2 in noncore counties to 24.1 in medium metropolitan counties.

• In 2017, 61,311 persons in the United States died from unintentional drug overdoses; the age-adjusted rate was 19.1. A total of 3,687 persons died of drug overdoses of undetermined intent; the age-adjusted rate was 1.1

Opioid-Involved Overdose Deaths (Table 4a)

• In 2017, 47,600 persons in the United States died from drug overdoses involving opioids; the age-adjusted rate was 14.9 per 100,000.
  – By sex, the rate was 20.4 among males and 9.4 among females.
  – By age, rates were highest among persons aged 25-34 years (29.1) and persons aged 35-44 years (27.3).
  – By race/ethnicity, rates ranged from 1.6 among non-Hispanic Asians/Pacific Islanders to 19.4 among non-Hispanic Whites.
  – By region, age-adjusted death rates for drug overdoses involving opioids ranged from 8.0 in the West to 21.3 in the Northeast.
  – By urbanization, age-adjusted death rates for drug overdoses involving opioids ranged from 11.2 in noncore counties to 17.2 in large fringe metropolitan counties.

• In 2017, 43,036 persons in the United States died from unintentional drug overdoses involving opioids; the age-adjusted rate was 13.5. A total of 2,586 persons died of drug overdoses of undetermined intent involving opioids; the age-adjusted rate was 0.8.

Prescription opioid-involved overdose deaths (Table 4b)

• In 2017, 17,029 persons in the United States died from drug overdoses involving prescription opioids (natural and semi-synthetic opioids [e.g., oxycodone and hydrocodone] and methadone); the age-adjusted rate was 5.2 per 100,000.
  – By sex, the rate was 6.1 among males and 4.2 among females.
  – By age, rates were highest among persons aged 45-54 years (10.0) and persons aged 35-44 years (9.1).
  – By race/ethnicity, rates ranged from 0.6 among non-Hispanic Asians/Pacific Islanders to 7.2 among non-Hispanic American Indians or Alaska Natives.
  – By region, age-adjusted death rates for drug overdoses involving prescription opioids ranged from 4.1 in the West to 5.6 in the South.
  – By urbanization, age-adjusted death rates for drug overdoses involving prescription opioids ranged from 4.7 in large central metropolitan counties to 5.9 in medium metropolitan counties.

• In 2017, 14,502 persons in the United States died from unintentional drug overdoses involving prescription opioids; the age-adjusted rate was 4.4. A total of 1,076 persons died of drug overdoses of undetermined intent involving prescription opioids; the age-adjusted rate was 0.3.

Natural and semi-synthetic opioid-involved overdose deaths (Table 4b)

• In 2017, 14,495 persons in the United States died from drug overdoses involving natural and semi-synthetic opioids (e.g., oxycodone, hydrocodone, or morphine); the age-adjusted rate was 4.4 per 100,000.
  – By sex, the rate was 5.2 among males and 3.6 among females.
  – By age, rates were highest among persons aged 45-54 years (8.6) and persons aged 35-44 years (7.7).
  – By race/ethnicity, rates ranged from 0.5 among non-Hispanic Asians/Pacific Islanders to 5.9 among non-Hispanic Whites.
  – By region, age-adjusted death rates for drug overdoses involving natural and semi-synthetic opioids ranged from 3.5 in the West to 4.9 in the South.
  – By urbanization, age-adjusted death rates for drug overdoses involving natural and semi-synthetic opioids ranged from 3.8 in large central metropolitan counties to 5.0 in medium metropolitan counties and micropolitan counties.

- In 2017, 12,255 persons in the United States died from unintentional drug overdoses involving natural and semi-synthetic opioids; the age-adjusted rate was 3.8. A total of 869 persons died of drug overdoses of undetermined intent involving natural and semi-synthetic opioids; the age-adjusted rate was 0.3.

Methadone-involved overdose deaths (**Table 4b**)

- In 2017, 3,194 persons in the United States died from drug overdoses involving methadone; the age-adjusted rate was 1.0 per 100,000.
  - By sex, the rate was 1.1 among males and 0.8 among females.
  - By age, rates were highest among persons aged 35-44 years (1.8) and persons aged 45-54 years (1.8).
  - By race/ethnicity, rates ranged from 0.5 among Hispanics to 1.8 among non-Hispanic American Indians/Alaskan Natives.
  - By region, age-adjusted death rates for drug overdoses involving methadone were 0.9 in the South and in the West, 1.0 in the Midwest and 1.2 in the Northeast.
  - By urbanization, age-adjusted death rates for drug overdoses involving methadone ranged from 0.8 in micropolitan counties to 1.1 in large central metropolitan counties.
- In 2017, 2,831 persons in the United States died from unintentional drug overdoses involving methadone; the age-adjusted rate was 0.9. A total of 265 persons died of drug overdoses of undetermined intent involving methadone; the age-adjusted rate was 0.1.

Heroin-involved overdose deaths (**Table 4b**)

- In 2017, 15,482 persons in the United States died from drug overdoses involving heroin; the age-adjusted rate was 4.9 per 100,000.
  - By sex, the rate was 7.3 among males and 2.5 among females.
  - By age, rates were highest among persons aged 25-34 years (10.8) and persons aged 35-44 years (9.1).
  - By race/ ethnicity, rates ranged from 0.5 among non-Hispanic Asians/Pacific Islanders to 6.1 among non-Hispanic Whites.
  - By region, age-adjusted death rates for drug overdoses involving heroin ranged from 2.8 in the West to 7.8 in the Northeast.
  - By urbanization, age-adjusted death rates for drug overdoses involving heroin ranged from 2.4 in noncore counties to 5.8 in large fringe metropolitan counties.
- In 2017, 14,762 persons in the United States died from unintentional drug overdoses involving heroin; the age-adjusted rate was 4.6. A total of 573 persons died of drug overdoses of undetermined intent involving heroin; the age-adjusted rate was 0.2.

Overdose deaths involving synthetic opioids other than methadone (**Table 4b**)

- In 2017, 28,466 persons in the United States died from drug overdoses involving synthetic opioids other than methadone (e.g., prescription and illicit fentanyl, tramadol); the age-adjusted rate was 9.0 per 100,000.
  - By sex, the rate was 13.0 among males and 5.0 among females.
  - By age, rates were highest among persons aged 25-34 years (19.5) and persons aged 35-44 years (17.3).
  - By race/ethnicity, rates ranged from 0.8 among non-Hispanic Asians/Pacific Islanders to 11.9 among non-Hispanic Whites.
  - By region, age-adjusted death rates for drug overdoses involving synthetic opioids other than methadone ranged from 1.9 in the West to 16.2 in the Northeast.
  - By urbanization, age-adjusted death rates for drug overdoses involving synthetic opioids other than methadone ranged from 6.0 in noncore counties to 11.6 in large fringe metropolitan counties.
- In 2017, 26,211 persons in the United States died from unintentional drug overdoses involving synthetic opioids other than methadone; the age-adjusted rate was 8.3. A total of 1,707 persons died of drug overdoses of undetermined intent involving synthetic opioids other than methadone; the age-adjusted rate was 0.5.

Selected Stimulant Overdose Deaths (**Table 4c**)

Cocaine-involved overdose deaths

- In 2017, 13,942 persons in the United States died from drug overdoses involving cocaine; the age-adjusted rate was 4.3 per 100,000.
  - By sex, the rate was 6.2 among males and 2.5 among females.
  - By age, rates were highest among persons aged 45-54 years (8.3) and persons aged 35-44 years (8.0).
  - By race/ethnicity, rates ranged from 0.6 among non-Hispanic Asians/Pacific Islanders to 8.3 among non-Hispanic Blacks.
  - By region, age-adjusted death rates for drug overdoses involving cocaine ranged from 1.3 in the West to 7.0 in the Northeast.
  - By urbanization, age-adjusted death rates for drug overdoses involving cocaine ranged from 1.6 in noncore counties to 5.3 in large central metropolitan counties.
- In 2017, 13,253 persons in the United States died from unintentional drug overdoses involving cocaine; the age-adjusted rate was 4.1. A total of 558 persons died of drug overdoses of undetermined intent involving cocaine; the age-adjusted rate was 0.2.

Overdose deaths involving psychostimulants with abuse potential

- In 2017, a total of 10,333 persons in the United States died from drug overdoses involving psychostimulants with abuse potential (e.g., methamphetamine, 3,4-methylenedioxy-methamphetamine [MDMA, Ecstasy], amphetamines); the age-adjusted rate was 3.2 per 100,000.
  - By sex, the rate was 4.5 among males and 1.9 among females.
  - By age, rates were highest among persons aged 35-44 years (6.2) and persons aged 45-54 years (5.8).
  - By race/ethnicity, rates ranged from 1.0 among non-Hispanic Asians/Pacific Islanders to 8.5 among non-Hispanic American Indians/Alaska Natives.
  - By region, age-adjusted death rates for drug overdoses involving psychostimulants with abuse potential ranged from 1.2 in the Northeast to 5.3 in the West.
  - By urbanization, age-adjusted death rates for drug overdoses involving psychostimulants with abuse potential ranged from 2.3 in large fringe metropolitan counties to 4.1 in medium metropolitan and noncore counties.
- In 2017, 9,786 persons in the United States died from unintentional drug overdoses involving psychostimulants with abuse potential; the age-adjusted rate was 3.1. A total of 269 persons died of drug overdoses of undetermined intent involving psychostimulants with abuse potential; the age-adjusted rate was 0.1.

Mortality Trends

Age-adjusted rates per 100,000 population of drug overdose deaths and drug overdose deaths involving any opioid, for all intents and for unintentional intent by year — United States, 1999-2017

(**Figure 2a** and **Supplemental data supporting Figure 2a**)

- The age-adjusted rate of drug overdose deaths of all intents increased from 6.1 per 100,000 in 1999 to 21.7 in 2017 ($p < 0.05$). Unintentional drug overdose death rates increased from 4.0 per 100,000 in 1999 to 19.1 in 2017 ($p < 0.05$).
- The rate of drug overdose deaths involving any opioid of all intents increased from 2.9 per 100,000 in 1999 to 14.9 in 2017 ($p < 0.05$). Unintentional drug overdose death rates involving any opioid increased from 2.1 per 100,000 in 1999 to 13.5 per 100,000 in 2017 ($p < 0.05$).
- During 1999 to 2017, age-adjusted rates increases for drug overdose deaths of all intents and unintentional drug overdose deaths were the largest from 2014 to 2017. Rate increases for drug

overdose deaths involving any opioid of all intents and unintentional drug overdoses involving any opioid were the largest from 2013 to 2017.
– The rate increased on average by 16% annually for drug overdose deaths of all intents (p < 0.05), and 18% annually for unintentional drug overdose deaths (p < 0.05) between 2014 and 2017. The rate increased on average by 18% annually for drug overdose deaths involving any opioid of all intents (p < 0.05), and 19% for unintentional drug overdoses involving any opioid (p < 0.05) between 2013 and 2017.

Age-adjusted rates per 100,000 population of drug overdose deaths by drug or drug class and year — United States, 1999–2017 (**Figure 2b** and **Supplemental Table 3a**)

- The age-adjusted rate of drug overdose deaths involving prescription opioids increased from 1.2 per 100,000 persons in 1999 to 5.2 in 2016 and 2017.
  – Rates for drug overdose deaths involving prescription opioids increased on average 19% annually from 1999 to 2006 (p < 0.05). From 2006 to 2017, rates increased from 3.9 per 100,000 to 5.2, an average increase of 2.0% annually (p < 0.05).
- For drug overdoses involving synthetic opioids other than methadone, the rate increased from 0.3 per 100,000 in 1999 to 9.0 in 2017.
  – Rates for drug overdose deaths involving synthetic opioids other than methadone increased on average 8.4% annually from 1999 to 2013 (p < 0.05). From 2013 to 2017, rates increased on average 69.8% annually (p < 0.05).
- The age-adjusted rate of drug overdose deaths involving heroin increased from 0.7 per 100,000 in 1999 to 4.9 in 2016 and 2017.
  – Rates for drug overdose deaths involving heroin did not change significantly from 1999 to 2004 (p = 0.42) and increased on average 9.9% annually from 2004 to 2010 (p < 0.05). Heroin rates increased on average 31.4% annually from 2010 to 2015 (p < 0.05) and 7.2% annually from 2015 to 2017, although the increase was not significant (p = 0.10).
- The age-adjusted rate of drug overdose deaths involving cocaine increased from 1.4 per 100,000 in 1999 to 4.3 in 2017.
  – Rates for drug overdose deaths involving cocaine increased on average 10.1% annually from 1999 to 2006 (p < 0.05), decreased on average 14.1% annually from 2006 to 2010, (p < 0.05), there was no significant change from 2010 to 2014 (p = 0.26), and then increased on average 37.6% annually from 2014 to 2017 (p < 0.05).
- The age-adjusted rate of drug overdose deaths involving psychostimulants with abuse potential increased from 0.2 per 100,000 in 1999 to 3.2 in 2017.
  – Rates for drug overdose deaths involving psychostimulants with abuse potential increased on average 19.2% annually from 1999 to 2005 (p < 0.05), there was no significant change from 2005 to 2008 (p = 0.59), increased an average of 20.2% annually from 2008 to 2012, and increased an average of 30.1% a year from 2012 to 2017 (p < 0.05).

Rates per 100,000 population of drug overdose deaths by drug or drug class and age category — United States, 2017 (**Figure 2c** and **Supplemental data supporting Figure 2c**)

- Among persons aged 15 to 24 years, the rate of drug overdose deaths involving synthetic opioids other than methadone was 6.1 per 100,000 persons; the rate involving heroin was 3.4; and the rate involving

prescription opioids was 2.4.
- Among persons aged 25 to 34 years, the rate of drug overdose deaths involving synthetic opioids other than methadone was 19.5 per 100,000 persons; the rate involving heroin was 10.8; and the rate involving prescription opioids was 7.5.
- Among persons aged 35 to 44 years, the rate of drug overdose deaths involving synthetic opioids other than methadone was 17.3 per 100,000 persons; the rate involving heroin was 9.1; and the rate involving prescription opioids was 9.1.
- Among persons aged 45 to 54 years, the rate of drug overdose deaths involving synthetic opioids other than methadone was 13.6 per 100,000 persons; the rate involving heroin was 7.2; and the rate involving prescription opioids was 10.0.
- Among persons aged 55 to 64 years, the rate of drug overdose deaths involving synthetic opioids other than methadone was 8.3 per 100,000 persons; the rate involving heroin was 4.8; and the rate involving prescription opioids was 8.4.
- Among persons aged 65 years and older, the rate of drug overdose deaths involving synthetic opioids other than methadone was 1.2 per 100,000 persons; the rate involving heroin was 0.7; and the rate involving prescription opioids was 2.1.
- Rates of drug overdose deaths involving cocaine were 8.3 per 100,000 among persons aged 45 to 54 years, 8.0 among persons aged 35 to 44 years, 7.6 among persons aged 25 to 34 years, 5.6 among persons aged 55 to 64, 2.1 among persons aged 15 to 24 years, and 0.8 among persons aged 65 years and older.
- Rates of deaths involving psychostimulants with abuse potential were 6.2 among persons aged 35 to 44 years, 5.8 per 100,000 among persons aged 45 to 54 years, 5.7 among persons aged 25 to 34 years, 3.9 among persons aged 55 to 64 years, 1.8 among persons aged 15 to 24 years, and 0.5 among persons aged 65 years and older.

Age-adjusted rates per 100,000 population of drug overdose deaths by state — United States, 2017 (Figure 2d)

- Rates of drug overdose deaths ranged from 8.1 per 100,000 in Nebraska to 57.8 in West Virginia in 2017.
  - States with the highest drug overdose death rates were West Virginia (57.8 per 100,000), Ohio (46.3), Pennsylvania (44.3), the District of Columbia (44.0), Kentucky (37.2), Delaware (37.0), and New Hampshire (37.0).
  - States with the lowest drug overdose death rates were Nebraska (8.1 per 100,000), South Dakota (8.5), North Dakota (9.2), Texas (10.5), and Iowa (11.5).

LIMITATIONS

This report has important limitations. To describe drug use and outcomes in the United States comprehensively, four independent data sources were used. Therefore, terms and definitions were not uniform across data sources. Further, the most recent year of available data varied. Collectively, these factors limit universal comparability across data sources. Consumers of the report should carefully review technical notes and footnotes to ensure correct interpretation of results, particularly when comparing information across sections.

Starting with 2017 data, IQVIA™ changed the frame of measurement from number of prescriptions "dispensed to bin" to number of prescriptions "sold to the patient." This change, which was not available for data prior to 2017, resulted in a 1.9% downward shift in prescriptions filled for 2017-2018. When analyzing trends using IQVIA™ data, we compared data with and without this modification and found no significant differences in our findings. Also, prescriptions filled through public health, prison systems, Veterans Health Administration, or by mail order are not included in IQVIA™ data.

For the National Survey on Drug Use and Health (NSDUH), data on substance use behavior are obtained through self-report. Therefore, these data might be subject to social desirability bias, leading to over- or underreporting of certain behaviors. NSDUH employs various methods to minimize these potential biases, such as assuring confidentiality of responses and using computer-assisted self-interviewing to maintain privacy. In SAMHSA's published report of 2018 data, different age categorizations were included in comparison to 2017 data. Therefore, some age categorizations differed between the 2017 and 2018 data tables.

Given the Healthcare Cost and Utilization Project transitioned from using *International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD-9-CM) diagnosis codes to *International Classification of Diseases, Tenth Revision, Clinical Modification/Procedure Coding System* (ICD-10-CM/PCS) on October 1, 2015 (the beginning of fiscal year 2016), we were unable to present trend analyses on ED visits and hospitalizations.

For the National Vital Statistics System, approximately 20% of drug overdose deaths from 1999 to 2017 involved drugs that were unspecified. Although this lack of specificity varies over time and across states, the drug specificity continues to improve over time. Through 2013, over 20% of death certificates annually lacked information about the drugs involved. In 2017, 12% of death certificates lacked information about which drugs were involved. Therefore, trend analysis should be interpreted with caution. In addition, this report does not consider co-involvement of drugs in overdose deaths. Recent analyses suggest that increases in stimulant-involved deaths are in part attributable to opioid co-involvement.[9]

Finally, the report does not address polysubstance use (i.e., the consumption of more than one drug over a defined period, simultaneously or at different times for either therapeutic or recreational purposes) or overdose. However, this report does not exclude overdoses where multiple substances were involved. Although this topic is important and an emerging threat in this evolving drug overdose landscape, it is currently beyond the scope of this report.

CDC's Opioid Overdose Surveillance, Prevention, and Research Efforts

CDC's mission in addressing the opioid overdose epidemic is to prevent opioid-related morbidity and mortality by:

1 Conducting surveillance and research to improve data quality and track trends using timely data;
2 Building state, local, and tribal capacity by scaling up and improving effective public health interventions;
3 Supporting providers, health systems, and payers with tools, recommendations, and guidance to improve patient safety;
4 Partnering with public safety to respond quicker and more effectively in innovative ways; and
5 Empowering consumers to make safe choices through education.

Conducting surveillance and research, and building state, local, and tribal capacity

CDC's National Center for Injury Prevention and Control (NCIPC) has funded several opioid surveillance and prevention efforts to build up public health surveillance of opioids at the state and federal levels to inform and enhance prevention activities. Through its funding to states, localities, territories, and tribes, CDC has strengthened response efforts. NCIPC funded multiple programs whose activities align with the integration of public health strategies to address the epidemic. Programs include the following:

1 **Enhanced State Opioid Overdose Surveillance (ESOOS) – funded 32 states and Washington, D.C. to:**
 a Increase the timeliness of nonfatal opioid overdose reporting to serve as an early warning system to detect sharp increases (i.e., potential outbreaks) or decreases (i.e., rapidly identify successful intervention efforts)
 b Increase the timeliness of fatal opioid overdose and associated risk factor reporting
 c Disseminate surveillance findings to key stakeholders working to prevent or respond to opioid overdoses
  (Funding period: September 1, 2016-August 31, 2019)
2 **Prevention for States (PfS) – funded 29 states to:**
 a Enhance and maximize prescription drug monitoring programs (PDMPs)
 b Implement community, insurer mechanism, or health systems interventions
 c Evaluate the effectiveness of prescription opioid-related state policies
 d Implement quick, flexible projects to respond to changing circumstances on the ground
  (Funding period: September 1, 2015-August 31, 2019)
3 **Data-Driven Prevention Initiative (DDPI) – funded 13 states and Washington, D.C. to:**
 a Improve data collection and analysis around opioid use, misuse, and overdose
 b Develop strategies that affect behavior driving prescription opioid abuse
 c Work with communities to develop more comprehensive opioid overdose prevention programs
  (Funding period: September 1, 2016-August 31, 2019)
4 **Opioid Prevention in States – Surge Support (OPIS-S2) – funded 50 states and 4 territories to:**
 a Advance the understanding of the opioid overdose epidemic, and scale up prevention and response activities to make an immediate impact and save lives
  (Funding period: September 1, 2018-August 31, 2019)

5 Opioid Overdose Prevention for Tribes – funded 11 Tribal Epidemiology Centers and 15 tribal entities to:
   a Improve epidemiologic surveillance and public health data infrastructure to address issues of data quality and timeliness
   b Implement evidence-based health systems interventions that are appropriate to tribal communities
   c Implement innovative community-based strategies (such as public health/public safety collaborations) that build upon strengths inherent to tribal organizations
   (Funding period: September 1, 2018-August 31, 2019)

Starting in September 2019, NCIPC expanded overdose surveillance and prevention funding to cover 47 states and 16 localities through Overdose Data to Action (OD2A). Overall, the objective of OD2A is to improve and expand surveillance and prevention capacity in order to use their data to inform their state and local prevention and response efforts. This will be accomplished by collecting higher quality, more comprehensive, and timelier data on drug overdose morbidity and mortality along with prevention activities, such as linkage to care and enhancing prescription drug monitoring programs (PDMPs). Additionally, there will be more flexibility with innovative surveillance and prevention strategies so that specific needs can be met at the local level.

Overdose Data to Action (OD2A): New CDC effort conducting surveillance and research, and building state, local, and tribal capacity (September 2019-August 2022)

1 Surveillance component
   a Collect and disseminate timely ED data on suspected all drug, all opioid, heroin, and all stimulant overdoses
   b Collect and disseminate descriptions of drug overdose death circumstances using death certificates and medical examiner/coroner reports, including toxicology results, on all unintentional or undetermined intent drug overdose deaths
   c Implement innovative surveillance to support OD2A interventions
2 Prevention component
   a Improving PDMPs
   b State and local integration to coordinate and leverage capacity and technical support
   c Systems-level approaches to connect individuals in need of care with those who provide that care (e.g., peer navigators, warm hand-offs, pre-arrest diversion and post-release linkages, community health workers)
   d Guarantee that providers and health systems are equipped to contribute to prevention and response solutions (e.g., academic detailing, guideline implementation support, coordinated care programs)
   e Optional strategies:
      i.   Public safety partnerships (e.g., data sharing and programs)
      ii.   Empowering individuals through communications awareness of risks, options, treatment resources, and risk-reduction strategies
      iii. Prevention-specific innovative projects
      iv.   Peer-to-peer learning coordinators for state programs to serve as subject matter experts for other states on specific prevention aspects

Tribal opioid overdose prevention support

The opioid overdose epidemic is affecting every part of the United States, with tribal communities being affected especially hard. Deaths involving prescription opioids for American Indian and Alaska Natives are higher than the national rate.[1] NCIPC provides support to tribes and key partners to strengthen their capacity in data collection, use, and sharing, to address a number of key issues including improving

racial classification, expanding data sharing to enhance non-fatal overdose data collection from EDs, and improving data abstraction from death certificates to collect timely data on opioid-related overdose deaths. CDC is also supporting strategic planning to implement or expand evidence-based health systems interventions and innovative community-based strategies with tribal communities. These activities will help address the critical need for public health prevention and intervention by directly funding American Indian and Alaska Native Tribal Nations and American Indian and Alaska Native regional Tribal-serving Organizations.

Funding extramural research

CDC supports extramural research to help combat the opioid overdose epidemic. Historically, NCIPC's research priorities have focused on: identifying risk and protective factors for drug overdose; evaluating the impact of prevention strategies on drug overdose, such as drug formulary management, state policies, and prescription drug monitoring programs; and furthering the adoption and implementation of clinical practice guidelines for opioid prescribing. Priorities are expanding with new research investments focusing on enhancing access to naloxone, improving linkage to treatment for opioid use disorder, and building partnerships between public health and public safety.

Supporting providers, health systems, and payers

The *CDC Guideline for Prescribing Opioids for Chronic Pain*,[10] released in March 2016, serves as a useful resource to providers treating adult patients with chronic pain in primary care settings outside of end-of-life, palliative, and active cancer care. Its 12 recommendations allow patients and clinicians to determine risks and benefits of opioid therapy and to determine optimal ways to manage pain. These recommendations include consideration of nonopioid options that may be safer and more effective at treating chronic pain, such as physical therapy. Tools and resources, such as the Opioid Guideline App, which contains a morphine milligram equivalent calculator, help disseminate information contained in the guideline, and make it easier for physicians to make better-informed decisions about prescribing. More information can be found at **https://www.cdc.gov/drugoverdose/prescribing/resources.html**.

To encourage uptake of the guidelines, CDC developed a comprehensive implementation plan, *Quality Improvement and Care Coordination: Implementing the CDC Guideline for Prescribing Opioids for Chronic Pain*.[11] Since healthcare systems have the potential to improve pain management, including safer use of opioids through guideline-concordant care on a broad scale, CDC developed quality improvement (QI) measures based on the guideline, with stakeholder engagement. These are voluntary QI measures intended to support practice improvement for primary care practices by tracking opioid prescribing and providing feedback to clinicians through a data dashboard. Six large healthcare systems are part of a 12-month Opioid QI Collaborative to pilot implementation of the QI measures and track their progress. In addition, CDC has developed clinical decision support tools also based on the guideline that healthcare systems can incorporate into clinical workflow in their electronic health records. The resource and operational QI measures can be found at **https://www.cdc.gov/drugoverdose/prescribing/qi-cc.html**.

CDC, in collaboration with the Office of the National Coordinator for Health Information Technology (ONC), developed clinical decision support tools (such as value sets, alerts, follow-up reminders) that can be embedded in electronic health records to incorporate the recommendation statements contained in the CDC Guideline into clinical workflow. More information is posted here: **https://cds.ahrq.gov/cdsconnect/artifact/factors-consider-managing-chronic-pain-pain-management-summary**.

CDC also funds cutting-edge research on ways to prevent opioid use disorder and overdose. For example, research priorities include identifying factors that increase risk for morbidity and mortality, evaluating the impact of state policies and strategies on prescribing behavior and health outcomes, and understanding effective approaches to integrate evidence-based guidelines and recommendations into clinical practice.

Partnering with public safety

Addressing the opioid overdose epidemic requires partnerships across sectors. In addition to the critical partnership with states and other federal agencies, CDC has been working with law enforcement partners, such as the Drug Enforcement Administration (DEA) and the High Intensity Drug Trafficking Area (HIDTAs) program. Working together, public health and public safety can share data to identify hotspots or overdose spikes, help equip first responders and community partners with naloxone to prevent deaths from overdoses in these areas, and link people with treatment and recovery services.

As a part of this work with public safety, CDC is leading the public health component of the Overdose Response Strategy, a collaboration with the Office of the National Drug Control Policy and 11 HIDTAs. The goals of this partnership are three-fold: to coordinate data sharing across public health and law enforcement; to develop and support the implementation of evidence-based practices; and to strengthen the engagement of local communities. As a part of the Overdose Response Strategy, CDC is supporting over a dozen community-level projects that will implement and evaluate innovative strategies at the intersection of public health and public safety to build evidence around programs that work. These projects tackle complex issues, such as linking people to treatment upon release from emergency departments and correctional facilities and forming multidisciplinary post-overdose outreach teams to connect with populations at high risk of overdose. Our hope is that communities can leverage these strategies to create local, targeted responses.

Empowering consumers

CDC raises awareness about the risks of opioid misuse in order to empower people to make safe choices. CDC created the *Rx Awareness* campaign to educate everyone about the dangers and risks of prescription opioids. The *Rx Awareness* campaign tells the real stories of people whose lives were torn apart by misuse of prescription opioids through videos, radio spots, social media, signs and billboards, and online ads. State and local health departments and community organizations can use the tested campaign materials and resources to launch campaigns, support local prevention activities, and raise awareness about the risks of prescription opioids. More information can be found at **https://www.cdc.gov/rxawareness/index.html.**

Moving forward

Although there are early indications of a slight decrease of drug overdose deaths and a stabilization of deaths involving specific opioid categories, urgent work remains to continue to respond to the opioid overdose epidemic in the United States. Additional measures are needed to address a diverse and evolving array of drug types, including polysubstance use. As new drug threats emerge, it is pertinent for public health and public safety to be well equipped to respond. To address the evolving drug landscape, CDC's National Center for Injury Prevention and Control (NCIPC) is expanding surveillance efforts to better capture and monitor emerging drug threats, including synthetic cannabinoids and stimulants. For example, with Overdose Data to Action (OD2A), surveillance data will now include nonfatal stimulant overdoses and all unintentional or undetermined intent drug overdose deaths. NCIPC will continue to be nimble as the drug overdose crisis continues to evolve and change. Improving drug overdose surveillance, empowering and equipping states, territories, counties, and cities with the resources and information they need, improving ways that opioids are prescribed through clinical practice guidelines, and forming critical partnerships are central to NCIPC's work to combat the overdose epidemic.

TECHNICAL NOTES

TECHNICAL NOTES

Data Sources, Definitions and Analysis

This report uses the most recently available data from four sources.

Information on opioid prescribing practices were obtained from the IQVIA™ Xponent and Total Patient Tracker (TPT). Estimated prescribing rates focus on information from 2018, but data are presented on prescribing trends from 2006 to 2018. Substance use and misuse data were obtained from the Substance Abuse and Mental Health Services Administration's (SAMHSA) 2017 and 2018 National Survey on Drug Use and Health (NSDUH). Information on medically attended non-fatal drug-related poisonings were obtained from the Healthcare Cost and Utilization Project's (HCUP) National Inpatient Sample (NIS) and Nationwide Emergency Department Sample (NEDS) 2016 surveys. Mortality rates were obtained from the National Vital Statistics System's (NVSS) 2017 mortality file, and trends were presented from 1999-2017. Variables for demographic characteristics (age, gender/sex, race and ethnicity, and geographic region) were standardized across data sources to the extent possible. In this report, when reporting findings by state, Washington, D.C. is included and referred to as a state.

Opioid Prescribing

Data Source

Data on opioid prescriptions filled were derived from the IQVIA™ Xponent and Total Patient Tracker (TPT), both of which are projections weighted to the national level. Xponent provided estimates of the number of opioid prescriptions filled in the United States from retail pharmacies. TPT provided national estimates of the total number of unique persons who had at least one opioid prescription filled during the year examined in the retail outpatient setting from U.S. retail pharmacies. Prescription coverage is 92% in both data sources. A prescription is an initial or refill pharmaceutical paid for by a commercial third party, Medicaid, Medicare Part D, or cash. Prescriptions filled through public health, prison systems, Veterans Health Administration, or by mail order are not included in IQVIA™ data.

Opioid prescriptions, including codeine, fentanyl, hydrocodone, hydromorphone, methadone, morphine, oxycodone, oxymorphone, propoxyphene, tapentadol, tramadol, and Butrans® (buprenorphine), were identified using the National Drug Code. Cough and cold formulations containing opioids were not included. Formulations of buprenorphine, an opioid primarily used for treatment of opioid use disorder, were not included, except for Butrans®, a transdermal buprenorphine formulation, and Belbuca®, an oral buprenorphine formulation, both used for pain management. In addition, methadone dispensed through methadone maintenance treatment programs is not included in IQVIA™ data.

Definitions

- **Days of supply**: Number of days the supply of a filled medication will last if taken as prescribed.

- **Long-acting (LA) or extended-release (ER) opioids:** Slower-acting opioids with a longer duration of pain-relieving action, including the following branded and generic drug products:
    – Extended-release, oral dosage forms containing:
    - Hydromorphone
    - Morphine
    - Oxycodone
    - Oxymorphone
    - Tapentadol
    – Extended-release, transdermal delivery systems containing:
    - Fentanyl
    - Buprenorphine
    – Long-acting tablets and solutions used as analgesics containing:
    - Methadone

- **Morphine milligram equivalents (MME)**: For a comparison of opioid doses, a methodology was developed to equate the many different opioids into one standard value. This standard value is based on morphine and its potency, referred to as morphine milligram equivalents (MME). MME helps determine the potency of persons' opioid doses and is useful if converting from one opioid to another. This measure provides the amount of opioids dispensed (i.e., dosage).

- **Morphine milligram equivalent per day (MME/day):**
    – MME/day = strength per unit x (number of units/days of supply) x MME conversion factor
    – "Number of units" and "days of supply" come from the prescription. "Strength per unit" and "MME conversion factor" can be determined from the National Drug Code.
    – The MME data file of select prescription opioids by National Drug Codes with conversion factors is available upon request by sending an email to **OREInfo@cdc.gov**. For combination drugs, "strength" refers to the strength of the controlled substance component of the drug per unit specified in unit of measure.
    – Examples:
    - 10 mg oxycodone tablets x (120 tablets/30 days) x 1.5 = 60 MME/day
    - 25 µg/hr fentanyl patch x (10 patches/30 days) x 7.2 = 60 MME/day

High-dose prescription: prescriptions with a dose greater than or equal to 90 MME/day.
- Examples:
    – 90 mg of hydrocodone (9 tablets of hydrocodone 10 mg+ acetaminophen 325 mg)
    – 60 mg of oxycodone (2 tablets of oxycodone extended-release 30 mg)
    – ~20 mg of methadone (4 tablets of methadone 5 mg)

Statistical Analyses

The percentage of persons who had at least one prescription filled for an opioid is derived using unique counts from TPT and census population numbers. Annual resident population denominator estimates were obtained from the Population Estimates Program, U.S. Census Bureau. For population data, **2000–2010 Intercensal Estimates of the Resident Population for Counties and States** were used for 2006–2010 rate calculations; **2010–2017 Postcensal Estimates of the Resident Population for Counties and National** were used for 2011-2018. For data stratified by age groups, the patient counts by age group for each sex do not sum to the total for each sex because the totals were calculated separately from TPT to avoid potential double counting of persons due to age progression and weighted estimates.

Annual opioid prescription fill rates were calculated by dividing the total number of opioid prescriptions filled in a given year, or state, as appropriate, by the census population. All rates are per 100 persons of all ages.

Temporal trends of national opioid prescription fill rate and amounts of opioids filled from 2006 to 2018 were evaluated by applying joinpoint regression methodology.[12] This modeling approach simultaneously identified statistically significant trends as well as shifts in trends that occurred within a time series. A maximum of two joinpoints were allowed, and the permutation method was used for model selection. The most parsimonious models were selected to report the estimated annual percent change (APC) for each time segment detected and the average annual percent change (AAPC) for the full study period. The terms "increasing" or "decreasing" were used to describe the trend when APC for each time segment was statistically significantly different from zero (p<0.05); otherwise, the trend was described as "not significant." Year categories presented in **Table 1d** represented year groupings as determined by joinpoint regression.

Drug Use, Misuse, Substance Use Disorder, and Treatment

Data Source

The National Survey on Drug Use and Health (NSDUH) is an annual face-to-face household survey administered by the Substance Abuse and Mental Health Services Administration.[13] NSDUH includes questions about substance use behavior, substance use initiation, substance use disorders, substance use treatment, and mental health. NSDUH collects data from civilian, noninstitutionalized persons aged 12 years and older residing in all 50 states and the District of Columbia. Noninstitutionalized persons include residents living in some group settings (e.g., shelters, boarding houses, college dormitories). NSDUH excludes persons with no fixed address (e.g., homeless and/or transient people not in shelters), active-duty military personnel, and residents of institutional group quarters (e.g., correctional facilities, nursing homes, mental institutions, long-term care hospitals).

Sampling and Data Collection

NSDUH collects data using a state-based, multistage area probability sample.[13] Each state is stratified into sampling regions of approximately equal population sizes. Census tracts are selected within sampling regions, census block groups are selected within census tracts, area segments are selected within census block groups, and dwelling units are selected within area segments. A maximum of two residents per dwelling unit, 12 years of age or older, are selected to participate in the interview. Because NSDUH collects information from self-reports of substance use behavior, these data might be subject to social desirability bias, leading to over- or underreporting of certain behaviors. NSDUH employs various methods to minimize these potential biases, such as assuring confidentiality of responses and using computer-assisted self-interviewing to maintain privacy. NSDUH data reflect prevalence estimates for the entire U.S. non-institutionalized population aged 12 years and older.

Although substantial modifications were made to the prescription drug questions in the 2015 NSDUH,[14] making it incomparable to previous years, no significant changes to questions producing the variables included in this report were made in the 2017 and 2018 NSDUH. Therefore, the 2017 and 2018 data are comparable to the 2016 data. Additionally, the 2017 NSDUH slightly altered question wording surrounding the use and misuse of prescription psychotherapeutics compared to the 2016 NSDUH. For the 2017 NSDUH, text was added to the questions about misuse of "any other" prescription pain reliever, stimulant, or sedative to remind respondents not to include over the counter medications (e.g., Tylenol®, Dexatrim®, Sominex®). In SAMHSA's report of 2018 NSDUH data, there were minor imputation changes from the 2017 report. Furthermore, the 2018 NSDUH reported benzodiazepine use and misuse for 2017 and 2018. Please see

SAMHSA's published reports of 2018 NSDUH results for further details.

Definitions

In specific tables in this report, estimates are provided for the combination of illicit drug use and prescription drug misuse. NSDUH defines prescription drug misuse as use in any way not directed by a prescriber, including use without a prescription of one's own; use in greater amounts, more often, or longer than told; or use in any other not directed ways.

NSDUH defines a broad category of "illicit drug use" as use of illicit drugs including marijuana, cocaine (including crack), heroin, hallucinogens (including PCP, LSD, peyote, mescaline, psilocybin or mushrooms, ecstasy or MDMA, ketamine, DMT, AMT, or Foxy, and *Salvia divinorum*), inhalants, methamphetamine, or prescription psychotherapeutics that were misused. Prescription psychotherapeutics include pain relievers, tranquilizers, stimulants, and sedatives and do not include over-the-counter drugs.

We avoid using the term "illicit drug use" to mean use of illicit drugs and misuse of prescription drugs collectively in this report and prefer to keep misuse of prescription drugs distinct from the use of illicit drugs to maintain consistency with other data sources included.

Included in this report are misuse and overall prevalence estimates for the following prescription drug categories, together referred to by NSDUH as "prescription psychotherapeutics":

- **Prescription pain relievers** included prescribed opioids that covered the following drug subcategories: hydrocodone products, oxycodone products, tramadol products, codeine products, morphine products, fentanyl products, buprenorphine products, oxymorphone products, meperidine products, hydromorphone products, methadone, or any other prescription pain reliever not including over-the-counter pain relievers;

- **Prescription tranquilizers** included drugs prescribed to reduce anxiety, specifically benzodiazepines (e.g., alprazolam, lorazepam, clonazepam, or diazepam), or to quell muscle spasms, specifically muscle relaxants (e.g., cyclobenzaprine);

- **Prescription stimulants** included drugs prescribed for treatment of attention-deficit hyperactivity disorder (e.g., dextroamphetamine, methylphenidate), obesity (e.g., benzphetamine, phentermine), or to promote wakefulness (e.g., Provigil®), and does not include over the counter stimulants; and

- **Prescription sedatives** included prescribed drugs intended to manage sleep disorders, such as zolpidem, eszopiclone, zaleplon, benzodiazepine sedatives (e.g., flurazepam, temazepam, triazolam), and barbiturates (e.g., butabarbital, secobarbital), and does not include over-the- counter sedatives.

This report also provides NSDUH prevalence estimates of use for the following illicit substances:

- **Marijuana** was classified as an illicit substance in NSDUH despite being legalized in the states of some respondents since it remains an illegal substance (Schedule I drug) under federal law;
- **Opioids** were a combination of heroin use and prescription pain reliever misuse;
- **Heroin;**
- **Cocaine** included powder, crack, free base, and coca paste; and
- **Methamphetamine.**

Census regions were defined by the following jurisdictions:

- **Northeast**: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont;
- **Midwest**: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio,

South Dakota, and Wisconsin;

- **South**: Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia; and

- **West**: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

County type was determined according to the "Rural-Urban Continuum Codes," a product of the U.S. Department of Agriculture.[13, 15]

- **Large metropolitan statistical areas** (MSAs) had a total population of 1 million or more.

- **Small metropolitan areas** had a total population of fewer than 1 million.

- **Nonmetropolitan** counties were classified according to the aggregate size of their urban population. Nonmetropolitan areas include counties in micropolitan statistical areas and counties outside of both metropolitan and micropolitan statistical areas and are classified as follows:
  – "urbanized"
  – "less urbanized"
  – "completely rural"

The Office of Management and Budget (OMB) defined nonmetropolitan counties according to (a) the size of the population in urbanized areas within the county (i.e., a population of 20,000 or more in urbanized areas, a population of at least 2,500 but fewer than 20,000 in urbanized areas, or a population of fewer than 2,500 in urbanized areas); and (b) whether these counties were adjacent or not adjacent to a metropolitan area. For NSDUH, the terms "urbanized," "less urbanized," and "completely rural" for counties were not based on the relative proportion of the county population in urbanized areas, but rather on the absolute size of the population in urbanized areas. For example, some counties classified as "less urbanized" had over 50 percent of the county population residing in urbanized areas, but this percentage represented fewer than 20,000 persons in the county.[13]

Substance use disorder, and treatment were defined in the following manner:

- **Substance use disorder** was defined as meeting criteria for illicit or prescription drug dependence or abuse based on definitions found in the 4th edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV);[16] and

- **Substance use treatment** refers to treatment received in order to reduce or stop illicit or prescription drug use, or for medical problems associated with illicit or prescription drug use. It includes treatment at any of the following locations: a hospital overnight as an inpatient, a residential drug rehabilitation facility where they stayed overnight, a drug rehabilitation facility as an outpatient, a mental health facility as an outpatient, an emergency room, a private doctor's office, a prison or jail, a self-help group, or some other place. Of these locations, emergency rooms, private doctors' offices, prisons or jails, and self-help groups were considered non-specialty substance use treatment facilities. Reports of treatment in some other place were considered to be treatment in specialty substance use treatment facilities only if respondents specified a location that corresponded to drug rehabilitation facilities (inpatient or outpatient), hospitals (inpatient only), or mental health centers.

Statistical Analysis

No statistical analyses were conducted; instead, estimates were obtained from SAMHSA's published reports of 2017[17] and 2018[18] NSDUH results. Data on heroin use stratified by gender, age category, U.S. census region, and county type were provided by SAMHSA. In this report, the highest and lowest values are presented, but we did not test for statistical differences across groups. Statistical differences can be calculated based on the provided point estimates and standard errors. In the 2018 report, there were minor imputation changes from the 2017 report. Please see **SAMHSA's published reports of 2018 NSDUH results** for further details.

Nonfatal Overdose Hospitalizations and Emergency Department (ED) Visits

Data Sources

Information on medically attended, nonfatal drug poisonings were obtained from the 2016 HCUP. The drug poisoning ICD-10-CM discharge codes available in HCUP are used as a proxy for overdose. Drug-related inpatient hospitalizations were obtained from HCUP's National Inpatient Sample (NIS). The NIS uses a stratified systematic random sampling design to produce nationally representative estimates of hospital discharges in the United States. It is the largest publicly available all-payer database in the United States and was conducted in 46 states plus the District of Columbia in 2016 and approximates a 20% stratified sample of discharges from U.S. community hospitals, excluding rehabilitation and long-term acute care facilities. The sample was stratified by the following hospital characteristics: U.S. census division, urban or rural location, teaching status, ownership, and bed size.

Discharge data for emergency department visits were obtained from the Nationwide Emergency Department Sample (NEDS), which is a stratified sample of billing records designed to produce national representative estimates of hospital-based ED visits in the United States. In 2016, data were obtained from 953 hospitals located in 36 states and the District of Columbia, approximating a 20 percent stratified sample of U.S. hospital-based EDs. The sample was drawn from non-federal, short-term, general, and other specialty hospitals and stratified by the following hospital characteristics: geographic region, trauma center designation, urban or rural location, teaching status, and hospital ownership.

The 2016 NIS and NEDS include a full calendar year of data with diagnosis and procedure codes reported using the *International Classification of Diseases, Tenth Revision, Clinical Modification/Procedure Coding System* (ICD-10-CM/PCS).

Definitions

ICD-10-CM/PCS diagnosis injury codes were used to classify drug-related poisonings. All diagnoses (not just principal) and all encounters (initial and subsequent) were included. Tables for all intents as well as for unintentional and undetermined intents were included. These definitions differ from last year's report due to HCUP's transition from ICD-9-CM to ICD-10-CM and changes in coding guidance within ICD-10-CM. Moreover, in last year's report, we included both ICD-9-CM and ICD-10-CM codes. Therefore, numbers and rates should not be compared between the two reports.

All intent tables included poisonings of accidental (unintentional), undetermined intent, intentional self-harm, and assault. All intent tables included the following ICD-10-CM/PCS codes:

- **All drug poisoning, all intent:*** T36.0X1x–T36.0X4x, T36.1X1x–T36.1X4x, T36.2X1x–T36.2X4x, T36.3X1x–T36.3X4x, T36.4X1x–T36.4X4x, T36.5X1x–T36.5X4x, T36.6X1x–T36.6X4x, T36.7X1x–T36.7X4x, T36.8X1x–T36.8X4x, T36.91Xx–T36.94Xx, T37.0X1x–T37.0X4x, T37.1X1x–T37.1X4x, T37.2X1x–T37.2X4x,

T37.3X1x–T37.3X4x, T37.4X1x–T37.4X4x, T37.5X1x–T37.5X4x, T37.8X1x–T37.8X4x, T37.91Xx–T37.94Xx, T38.0X1x–T38.0X4x, T38.1X1x–T38.1X4x, T38.2X1x–T38.2X4x, T38.3X1x–T38.3X4x, T38.4X1x–T38.4X4x, T38.5X1x–T38.5X4x, T38.6X1x–T38.6X4x, T38.7X1x–T38.7X4x, T38.801x–T38.804x, T38.811x–T38.814x, T38.891x–T38.894x, T38.901x–T38.904x, T38.991x–T38.994x, T39.011x–T39.014x, T39.091x–T39.094x, T39.1X1x–T39.1X4x, T39.2X1x–T39.2X4x, T39.311x–T39.314x, T39.391x–T39.394x, T39.4X1x–T39.4X4x, T39.8X1x–T39.8X4x, T39.91Xx–T39.94Xx, T40.0X1x–T40.0X4x, T40.1X1x–T40.1X4x, T40.2X1x–T40.2X4x, T40.3X1x–T40.3X4x, T40.4X1x–T40.4X4x, T40.5X1x–T40.5X4x, T40.601x–T40.604x, T40.691x–T40.694x, T40.7X1x–T40.7X4x, T40.8X1x–T40.8X4x, T40.901x–T40.904x, T40.991x–T40.994x, T41.0X1x–T41.0X4x, T41.1X1x–T41.1X4x, T41.201x–T41.204x, T41.291x–T41.294x, T41.3X1x–T41.3X4x, T41.41Xx–T41.44Xx, T41.5X1x–T41.5X4x, T42.0X1x–T42.0X4x, T42.1X1x–T42.1X4x, T42.2X1x–T42.2X4x, T42.3X1x–T42.3X4x, T42.4X1x–T42.4X4x, T42.5X1x–T42.5X4x, T42.6X1x–T42.6X4x, T42.7X1x–T42.7X4x, T42.8X1x–T42.8X4x, T43.011x–T43.014x, T43.021x–T43.024x, T43.1X1x–T43.1X4x, T43.201x–T43.204x, T43.211x–T43.214x, T43.221x–T43.224x, T43.291x–T43.294x, T43.3X1x–T43.3X4x, T43.4X1x–T43.4X4x, T43.501x–T43.504x, T43.591x–T43.594x, T43.601x–T43.604x, T43.611x–T43.614x, T43.621x–T43.624x, T43.631x– T43.634x, T43.691x–T43.694x, T43.8X1x–T43.8X4x, T43.91Xx–T43.94Xx, T44.0X1x–T44.0X4x, T44.1X1x–T44.1X4x, T44.2X1x–T44.2X4x, T44.3X1x–T44.3X4x, T44.4X1x– T44.4X4x, T44.5X1x–T44.5X4x, T44.6X1x–T44.6X4x, T44.7X1x–T44.7X4x, T44.8X1x– T44.8X4x, T44.901x–T44.904x, T44.991x–T44.994x, T45.0X1x–T45.0X4x, T45.1X1x– T45.1X4x, T45.2X1x–T45.2X4x, T45.3X1x–T45.3X4x, T45.4X1x–T45.4X4x, T45.511x– T45.514x, T45.521x–T45.524x, T45.601x–T45.604x, T45.611x–T45.614x, T45.621x– T45.624x, T45.691x–T45.694x, T45.7X1x–T45.7X4x, T46.8X1x–T46.8X4x, T46.901x– T46.904x, T46.991x–T46.994x, T47.0X1x–T47.0X4x, T47.1X1x–T47.1X4x, T47.2X1x– T47.2X4x, T47.3X1x–T47.3X4x, T47.4X1x–T47.4X4x, T47.5X1x–T47.5X4x, T48.6X1x– T48.6X4x, T48.901x–T48.904x, T49.0X1x–T49.0X4x, T49.1X1x–T49.1X4x, T49.2X1x– T49.2X4x, T49.3X1x–T49.3X4x, T49.4X1x–T49.4X4x, T49.5X1x–T49.5X4x, T49.6X1x– T49.6X4x, T49.7X1x–T49.7X4x, T49.8X1x–T49.8X4x, T49.91Xx–T49.94Xx, T50.0X1x– T50.0X4x, T50.1X1x–T50.1X4x, T50.2X1x–T50.2X4x, T50.3X1x–T50.3X4x, T50.4X1x– T50.4X4x, T50.5X1x–T50.5X4x, T50.6X1x–T50.6X4x, T50.7X1x–T50.7X4x, T50.8X1x– T50.8X4x, T50.A11x–T50.A14x, T50.A21x–T50.A24x, T50.A91x–T50.A94x, T50.B91x– T50.B94x, T50.Z11x–T50.Z14x, T50.Z91x–T50.Z94x, T50.901x–T50.904x, T50.991x–T50.994x

- **Opioid drug poisoning, all intents:*** T40.0X1x–T40.0X4x, T40.1X1x–T40.1X4x, T40.2X1x–T40.2X4x, T40.3X1x–T40.3X4x, T40.4X1x–T40.4X4x, T40.601x–T40.604x, T40.691x–T40.694x

- **Heroin poisoning, all intents:*** T40.1X1x–T40.1X4x

- **Methadone poisoning, all intents:*** T40.3X1x–T40.3X4x

- **Poisoning by other opioids, all intents:*** T40.0X1x–T40.0X4x, T40.2X1x–T40.2X4x, T40.4X1x–T40.4X4x, T40.601x–T40.604x

- **Cocaine poisoning, all intents:*** T40.5X1x–T40.5X4x

- **Methamphetamine poisoning, all intents:*** T43.621x–T43.624x

  *where x = A, D, or S

Unintentional and undetermined intent tables included poisonings of accidental (unintentional) or undetermined intent only, and they excluded poisonings attributable to intentional self-harm and assault. Unintentional and undetermined intent tables included the following ICD-10-CM/PCS codes:

- **All drug poisoning, unintentional or undetermined intent:*** T36.0X1x, T36.0X4x, T36.1X1x, T36.1X4x, T36.2X1x, T36.2X4x, T36.3X1x, T36.3X4x, T36.4X1x, T36.4X4x, T36.5X1x, T36.5X4x, T36.6X1x, T36.6X4x, T36.7X1x, T36.7X4x, T36.8X1x, T36.8X4x, T36.91Xx, T36.94Xx, T37.0X1x, T37.0X4x, T37.1X1x, T37.1X4x,

T37.2X1x, T37.2X4x, T37.3X1x, T37.3X4x, T37.4X1x, T37.4X4x, T37.5X1x, T37.5X4x, T37.8X1x, T37.8X4x, T37.91Xx, T37.94Xx, T38.0X1x, T38.0X4x, T38.1X1x, T38.1X4x, T38.2X1x, T38.2X4x, T38.3X1x, T38.3X4x, T38.4X1x, T38.4X4x, T38.5X1x, T38.5X4x, T38.6X1x, T38.6X4x, T38.7X1x, T38.7X4x, T38.801x, T38.804x, T38.811x, T38.814x, T38.891x, T38.894x, T38.901x, T38.904x, T38.991x, T38.994x, T39.011x, T39.014x, T39.091x, T39.094x, T39.1X1x, T39.1X4x, T39.2X1x, T39.2X4x, T39.311x, T39.314x, T39.391x, T39.394x, T39.4X1x, T39.4X4x, T39.8X1x, T39.8X4x, T39.91Xx, T39.94Xx, T40.0X1x, T40.0X4x, T40.1X1x, T40.1X4x, T40.2X1x, T40.2X4x, T40.3X1x, T40.3X4x, T40.4X1x, T40.4X4x, T40.5X1x, T40.5X4x, T40.601x, T40.604x, T40.691x, T40.694x, T40.7X1x, T40.7X4x, T40.8X1x, T40.8X4x, T40.901x, T40.904x, T40.991x, T40.994x, T41.0X1x, T41.0X4x, T41.1X1x, T41.1X4x, T41.201x, T41.204x, T41.291x, T41.294x, T41.3X1x, T41.3X4x, T41.41Xx, T41.44Xx, T41.5X1x, T41.5X4x, T42.0X1x, T42.0X4x, T42.1X1x, T42.1X4x, T42.2X1x, T42.2X4x, T42.3X1x, T42.3X4x, T42.4X1x, T42.4X4x, T42.5X1x, T42.5X4x, T42.6X1x, T42.6X4x, T42.7X1x, T42.7X4x, T42.8X1x, T42.8X4x, T43.011x, T43.014x, T43.021x, T43.024x, T43.1X1x, T43.1X4x, T43.201x, T43.204x, T43.211x, T43.214x, T43.221x, T43.224x, T43.291x, T43.294x, T43.3X1x, T43.3X4x, T43.4X1x, T43.4X4x, T43.501x, T43.504x, T43.591x, T43.594x, T43.601x, T43.604x, T43.611x, T43.614x, T43.621x, T43.624x, T43.631x, T43.634x, T43.691x, T43.694x, T43.8X1x, T43.8X4x, T43.91Xx, T43.94Xx, T44.0X1x, T44.0X4x, T44.1X1x, T44.1X4x, T44.2X1x, T44.2X4x, T44.3X1x, T44.3X4x, T44.4X1x, T44.4X4x, T44.5X1x, T44.5X4x, T44.6X1x, T44.6X4x, T44.7X1x, T44.7X4x, T44.8X1x, T44.8X4x, T44.901x, T44.904x, T44.991x, T44.994x, T45.0X1x, T45.0X4x, T45.1X1x, T45.1X4x, T45.2X1x, T45.2X4x, T45.3X1x, T45.3X4x, T45.4X1x, T45.4X4x, T45.511x, T45.514x, T45.521x, T45.524x, T45.601x, T45.604x, T45.611x, T45.614x, T45.621x, T45.624x, T45.691x, T45.694x, T45.7X1x, T45.7X4x, T46.8X1x, T46.8X4x, T46.901x, T46.904x, T46.991x, T46.994x, T47.0X1x, T47.0X4x, T47.1X1x, T47.1X4x, T47.2X1x, T47.2X4x, T47.3X1x, T47.3X4x, T47.4X1x, T47.4X4x, T47.5X1x, T47.5X4x, T48.6X1x, T48.6X4x, T48.901x, T48.904x, T49.0X1x, T49.0X4x, T49.1X1x, T49.1X4x, T49.2X1x, T49.2X4x, T49.3X1x, T49.3X4x, T49.4X1x, T49.4X4x, T49.5X1x, T49.5X4x, T49.6X1x, T49.6X4x, T49.7X1x, T49.7X4x, T49.8X1x, T49.8X4x, T49.91Xx, T49.94Xx, T50.0X1x, T50.0X4x, T50.1X1x, T50.1X4x, T50.2X1x, T50.2X4x, T50.3X1x, T50.3X4x, T50.4X1x, T50.4X4x, T50.5X1x, T50.5X4x, T50.6X1x, T50.6X4x, T50.7X1x, T50.7X4x, T50.8X1x, T50.8X4x, T50.A11x, T50.A14x, T50.A21x, T50.A24x, T50.A91x, T50.A94x, T50.B91x, T50.B94x, T50.Z11x, T50.Z14x, T50.Z91x, T50.Z94x, T50.901x, T50.904x, T50.991x, T50.994x

- **Opioid drug poisoning:*** T40.0X1x, T40.0X4x, T40.1X1x, T40.1X4x, T40.2X1x, T40.2X4x, T40.3X1x, T40.3X4x, T40.4X1x, T40.4X4x, T40.601x, T40.604x, T40.691x, T40.694x

- **Heroin poisoning:*** T40.1X1x, T40.1X4x

- **Methadone poisoning:*** T40.3X1x, T40.3X4x

- **Poisoning by other opioids:*** T40.0X1x, T40.0X4x, T40.2X1x, T40.2X4x, T40.4X1x, T40.4X4x, T40.601x, T40.604x

- **Cocaine poisoning:*** T40.5X1x, T40.5X4x

- **Methamphetamine poisoning:*** T43.621x, T43.624x

   *where x = A, D, or S

As poisoning-related hospitalizations and ED visits may involve more than one type of drug, poisonings presented are not mutually exclusive.

Information about persons' race and ethnicity was not available for ED visits; therefore, it was not included in any HCUP analyses.

Census regions were defined earlier in this report under the section, "Drug Use, Misuse, Substance Use Disorder, Drug Initiation, and Treatment."

Urbanization of patient residence is based on the 2013 National Center for Health Statistics Urban-Rural Classification Scheme for Counties.[19] The categories are defined as follows:

- **Large central metro**: Counties in metropolitan statistical areas (MSAs) of 1 million or more population that:
  – Contain the entire population of the largest principal city of the MSA, or
  – Have their entire population contained in the largest principal city of the MSA, or
  – Contain at least 250,000 inhabitants of any principal city of the MSA.

- **Large fringe metro**: Counties in MSAs of 1 million or more population that did not qualify as large central metro counties.

- **Medium metro**: Counties in MSAs of populations of 250,000 to 999,999.

- **Small metro**: Counties in MSAs of populations less than 250,000.

- **Micropolitan**: Nonmetropolitan counties in micropolitan statistical areas.

- **Noncore**: Nonmetropolitan counties that did not qualify as micropolitan.

Statistical Analysis

Data were weighted to provide national estimates of annual numbers and rates per 100,000 population. Rates were based on U.S. population estimates according to sex, age, U.S. census region, and 2013 urbanization status.[19, 20] Age-adjusted rates were standardized to the U.S. census population estimates for 2000 by the direct method. Estimates were considered unreliable and not reported if the relative standard error was > 30% or the standard error = 0. All statistical analyses accounted for the complex sampling design and were performed using SAS Version 9.4 (SAS Institute, Cary, North Carolina).

To minimize the possibility of duplicate counting within this section or across other sections of this report, we excluded certain records. Hospital transfers and hospital admissions that occurred directly from the ED were excluded because of potential duplication with the hospitalization data. In-hospital deaths were excluded from the ED visits and hospitalization estimates because these would be included in the mortality section.

In this report, the highest and lowest values are presented, but we did not test for statistical differences across groups. Statistical differences can be calculated based on the provided point estimates and standard errors provided.

Mortality Rates

Data Source

Mortality data were obtained from the Mortality Component of the National Vital Statistics System. Drug overdose deaths were analyzed using the multiple cause of death query system from CDC Wide-ranging Online Data for Epidemiologic Research (CDC WONDER).[2] Data from death certificates filed in the 50 states and the District of Columbia are based on underlying and multiple causes of death fields.[21]

Definitions

Drug overdose deaths were identified using the International Classification of Diseases, Tenth Revision (ICD-10), based on the ICD-10 underlying cause-of-death codes X40–44 (unintentional), X60–64 (suicide), X85 (homicide), or Y10–Y14 (undetermined intent).

Among deaths with drug overdose as the underlying cause, the type of drugs involved in the deaths were indicated by the following ICD-10 multiple cause-of-death codes (i.e., T-codes):

- **Heroin** (T40.1);

- **Natural/semisynthetic opioids** (T40.2), which includes drugs such as hydrocodone and oxycodone;

- **Methadone** (T40.3);

- **Synthetic opioids other than methadone** (T40.4), which includes drugs such as fentanyl and tramadol;

- **Deaths involving any opioid** (T40.0 (opium), T40.1, T40.2, T40.3, T40.4 and T40.6 (other and unspecified narcotics)), which includes drugs such as those listed above, as well as opioids where the type of opioid was not specified;

- **Deaths involving a prescription opioid** (T40.2) natural and semi-synthetic opioids and (T40.3) methadone;

- **Cocaine** (T40.5); and

- **Psychostimulants with abuse potential** (T43.6), which includes such drugs as methamphetamine, 3,4-methylenedioxy-methamphetamine (MDMA), dextroamphetamine, levoamphetamine, methylphenidate (Ritalin), and caffeine.

As drug overdose deaths may involve more than one type of drug, some deaths are included in the rates in more than one subcategory. Therefore, categories of drug overdose deaths presented were not mutually exclusive. Additionally, in 2017, approximately 12% of drug overdose deaths did not specify which drugs were involved.

Census regions were defined under the section on "Drug Use, Misuse, Substance Use Disorder, Drug Initiation, and Treatment."

Death rates are calculated by decedent's place of residence, not place of occurrence of the death. Decedent's county of residence was determined according to categories of the 2013 National Center for Health Statistics Urban-Rural Classification Scheme for Counties.[19] These are defined above in the section for "Nonfatal Overdose Hospitalizations and Emergency Department (ED) Visits."

All records where Hispanic origin was not stated were not included in estimates by Hispanic origin but were included in the overall estimates. Data for Hispanic origin should be interpreted with caution; studies comparing Hispanic origin on death certificates and on census surveys have shown inconsistent reporting on Hispanic ethnicity.[22]

Statistical Analyses

Rates were calculated per 100,000 resident population, age-adjusted to the 2000 U.S. standard population using the vintage year population of the data year. Crude rates were presented for age groups. Significance testing for trends over time was performed with joinpoint software from the National Cancer Institute.[12] Significance tests used a Monte Carlo Permutation method.[23] The most parsimonious models were selected to report the estimated annual percent change (APC) for each time segment detected that was statistically significantly different from zero (p<0.05); otherwise, the term "not significant" was used.

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TABLES

TABLE 1A	National estimates of total number and percentage of persons who had at least one prescription filled for an opioid, by age and sex — United States, 2018

Age group (years)	Gender	Number	Percent[a]
0–14	Total	768,962	1.3
	Male	399,704	1.3
	Female	369,258	1.2
15–19	Total	1,876,304	8.9
	Male	837,436	8.1
	Female	1,038,868	10.1
20–24	Total	2,468,395	11.2
	Male	925,544	8.2
	Female	1,542,851	14.3
25–34	Total	6,786,718	14.7
	Male	2,491,609	10.6
	Female	4,295,109	19.0
35–44	Total	7,417,100	17.9
	Male	3,010,659	14.5
	Female	4,406,440	21.3
45–54	Total	8,547,366	20.4
	Male	3,677,678	17.8
	Female	4,869,688	23.0
55–64	Total	10,184,432	23.9
	Male	4,612,416	22.4
	Female	5,572,016	25.3
≥ 65	Total	13,177,942	25.0
	Male	5,531,474	23.5
	Female	7,646,467	26.1
All ages[b]	Total	49,515,948	15.0
	Male	20,780,572	12.8
	Female	28,735,376	17.2

Source: IQVIA™ Total Patient Tracker (TPT), 2018. Data extracted in 2019.

[a]The annual percentage of population who filled an opioid prescription by age group was calculated as population-based by weighting raw values to national populations of study year.

[b]Patient numbers by age group for each sex do not sum to the total number for each sex because the total number for each sex was calculated separately from TPT to avoid potential double counting of persons due to age progression.

TABLE 1B	**Total number and rate of opioid prescriptions and morphine milligram equivalents (MME) dispensed per 100 persons annually — United States, 2018**

Opioids prescribed	Number	Rate[a]
Prescriptions (Rx)		
All opioids	168,158,611	51.4
LA/ER opioids[b]	14,811,160	4.5
Days of supply per Rx		
< 30 days	96,196,574	29.4
≥ 30 days	71,962,037	22.0
< 3 days	26,792,643	8.2
< 7 days	59,492,722	18.2
≥ 3 days and < 7 days	32,700,079	10.0
Average opioid Rx per patient[c]	3.4	
Average days of supply per Rx	18.4	
MME		
Total MME	138,900,570,581	
MME per capita	424.6	
Average MME per Rx	828.1	
Average daily MME per Rx	42.9	
Daily dosage per Rx		
< 50 MME	129,792,025	39.7
≥ 50 but < 90 MME	25,769,022	7.9
≥ 90 MME (high-dose)	12,597,565	3.9

Source: IQVIA™ Xponent 2018. Data extracted in 2019.
Abbreviations: MME, morphine milligram equivalents; Rx, prescriptions.
[a]Rate per 100 persons adjusted to the U.S. census population.
[b]LA/ER represents opioids that are long acting (LA) or extended release (ER).
[c]Based on number of patients who filled an opioid prescription.

| TABLE 1C | **Rates[a] of opioid prescriptions filled per 100 persons by type, dosage, and state — United States, 2018** |

State	Opioid Type		Daily Dosage Per Rx (MME/Day)			State	Opioid Type		Daily Dosage Per Rx (MME/Day)		
	All	LA/ER[b]	< 50	≥ 50 and < 90	≥ 90		All	LA/ER[b]	< 50	≥ 50 and < 90	≥ 90
Alabama	97.5	6.9	81.5	10.8	5.1	Montana	54.0	5.3	40.2	9.7	4.1
Alaska	44.9	6.3	27.4	10.7	6.8	Nebraska	50.6	4.8	39.8	7.7	3.1
Arizona	50.7	5.5	36.1	9.6	5.1	Nevada	55.5	6.0	39.6	11.2	4.7
Arkansas	93.5	5.8	78.1	10.8	4.6	New Hampshire	46.1	7.0	30.3	9.4	6.4
California	35.1	3.0	27.6	4.8	2.6	New Jersey	38.9	4.4	26.7	7.2	5.0
Colorado	45.1	4.5	33.1	8.6	3.4	New Mexico	49.4	3.6	37.8	8.3	3.4
Connecticut	43.0	4.6	29.8	8.4	4.8	New York	34.0	3.6	25.2	5.2	3.6
Delaware	60.6	10.1	42.3	10.5	7.8	North Carolina	61.5	5.9	45.4	11.6	4.5
District of Columbia	25.0	1.6	21.6	2.2	1.1	North Dakota	37.4	3.9	29.1	6.0	2.3
Florida	53.7	5.8	38.3	9.9	5.5	Ohio	53.5	4.2	44.4	6.0	3.1
Georgia	63.2	4.7	49.5	9.3	4.4	Oklahoma	79.1	7.4	58.8	15.0	5.3
Hawaii	33.4	3.5	24.5	5.1	3.8	Oregon	57.3	5.6	41.3	11.6	4.4
Idaho	61.9	6.3	43.1	13.3	5.4	Pennsylvania	49.9	5.4	37.0	7.7	5.2
Illinois	45.2	2.9	37.3	5.7	2.2	Rhode Island	43.0	4.0	35.1	4.4	3.6
Indiana	65.8	5.0	52.5	9.2	4.1	South Carolina	69.2	5.5	53.2	11.2	4.7
Iowa	49.3	4.2	39.8	6.4	3.1	South Dakota	42.6	4.1	33.7	6.0	2.8
Kansas	64.3	5.8	46.4	12.4	5.4	Tennessee	81.8	7.0	59.6	16.7	5.5
Kentucky	79.5	4.6	63.2	12.1	4.2	Texas	47.2	2.8	40.4	4.8	2.0
Louisiana	79.4	4.4	66.0	9.5	3.8	Utah	57.1	6.0	38.9	11.6	6.7
Maine	48.1	6.3	35.2	8.3	4.6	Vermont	42.4	7.0	29.1	6.6	6.8
Maryland	45.1	5.7	31.5	9.2	4.4	Virginia	44.8	4.1	34.5	6.5	3.8
Massachusetts	35.3	3.9	26.6	5.5	3.2	Washington	49.3	4.9	35.0	10.4	3.9
Michigan	62.7	5.5	52.5	6.1	4.1	West Virginia	69.3	5.0	56.9	7.9	4.4
Minnesota	35.5	3.4	26.7	6.6	2.3	Wisconsin	45.8	4.8	34.3	8.2	3.3
Mississippi	76.8	4.7	65.2	7.9	3.7	Wyoming	57.1	6.2	40.8	10.5	5.8
Missouri	63.4	5.2	48.7	10.1	4.7						

Source: IQVIA™ Xponent 2018. Data extracted in 2019.
Abbreviations: MME, morphine milligram equivalents; Rx, prescriptions.
[a]Rate per 100 persons adjusted to the U.S. census population.
[b]LA/ER represents opioids that are long acting (LA) or extended release (ER).

TABLE 1D	**Trend analyses of opioid prescriptions filled and morphine milligram equivalents (MME) dispensed — United States, 2006–2018[a]**

Opioid prescribing	2006	2018	Average APC (95% CL)	Trend 1 Years[c]	Trend 1 APC (95% CL)	Trend 2 Years[c]	Trend 2 APC (95% CL)	Trend 3 Years[c]	Trend 3 APC (95% CL)
	Prescription fill rate[b]								
All opioid Rx	72.4	51.4	-3.0 (-4.1,-2.0)[d]	2006-2012	1.9 (0.9,2.9)[d]	2012-2016	-5.2 (-7.9,-2.5)[d]	2016-2018	-12.4 (-17.3,-7.2)[d]
High-dosage Rx[e]	11.5	3.9	-8.6 (-11.9,-5.2)[d]	2006-2009	-0.5 (-10.5,10.5)	2009-2016	-8.9 (-12.1,-5.6)[d]	2016-2018	-18.5 (-34.0,0.7)
Days of supply ≥ 30	17.6	22.0	1.8 (1.0,2.7)[d]	2006-2010	10.3 (8.5,12.1)[d]	2010-2015	1.9 (0.2,3.5)[d]	2015-2018	-8.4 (-10.7,-6.0)[d]
Days of supply < 30	54.7	29.4	-5.2 (-6.3,-4.1)[d]	2006-2012	-0.5 (-1.6,0.5)	2012-2016	-7.6 (-10.4,-4.7)[d]	2016-2018	-13.7 (-18.8,-8.3)[d]
Days of supply < 3	16.2	8.2	-5.7 (-6.4,-5.0)[d]	2006-2012	-2.4 (-3.0,-1.7)[d]	2012-2016	-8.2 (-9.9,-6.4)[d]	2016-2018	-10.5 (-13.8,-7.1)[d]
Days of supply < 7	35.3	18.2	-5.5 (-6.4,-4.6)[d]	2006-2010	-1.1 (-2.8, 0.7)	2010-2014	-5.3 (-7.9,-2.5)[d]	2014-2018	-10.0 (-11.6,-8.4)[d]
Days of supply ≥ 3 and < 7	19.1	10.0	-5.4 (-6.3,-4.6)[d]	2006-2010	-0.6 (-2.3,1.1)	2010-2014	-5.3 (-7.9,-2.6)[d]	2014-2018	-10.2 (-11.8,-8.6)[d]
	Number								
Average daily MME per Rx	59.7	42.9	-2.6 (-3.4,-1.7)	2006-2010	-1.1 (-2.3,0.2)	2010-2013	-4.3 (-8.2,-0.2)[d]	2013-2018	-2.7 (-3.6,-1.8)[d]
Average days of supply per Rx	13.3	18.4	2.7 (2.5,2.9)[d]	2006-2010	4.0 (3.5,4.4)[d]	2010-2016	2.6 (2.3,2.8)[d]	2016-2018	0.7 (-0.5,2.0)

Source: IQVIA™ Xponent 2006-2018. Data extracted in 2019.
Abbreviations: APC, annual percent change; CL, confidence limits; MME, morphine milligram equivalent; Rx, prescription.
[a]When analyzing trends using IQVIA™ data, data were compared with and without the IQVIA™ data modification starting in 2017 and found no significant differences in our findings.
[b]Rate per 100 persons adjusted to the U.S. census population.
[c]Year category presented in each trend represents groupings as determined by joinpoint regression.
[d]Indicates that the annual percent change was significantly different from 0 (p<0.05).
[e]High-dose prescriptions were defined as opioid prescriptions resulting in a daily dosage of ≥ 90 MME.

TABLE 2A **Self-reported prevalence of illicit drug use[a] and prescription drug misuse[b] in the <u>past month</u>, persons 12+ years old, numbers in thousands — United States, 2017**

Socio-demographic characteristic	All illicit drug use and prescription drug misuse			Prescription pain relievers			Prescription tranquilizers			Prescription stimulants			Prescription sedatives		
	Number	%	SE	Number	%	SE	Number	%	SE	Number	%	SE	Number	%	SE
All	30,476	11.2	0.19	3,239	1.2	0.06	1,727	0.6	0.04	1,841	0.7	0.04	352	0.1	0.02
Gender															
Male	18,134	13.7	0.29	1,760	1.3	0.09	920	0.7	0.06	1037	0.8	0.06	224	0.2	0.03
Female	12,342	8.8	0.21	1,479	1.1	0.08	807	0.6	0.05	803	0.6	0.05	128	0.1	0.02
Age (years)															
12–17	1,966	7.9	0.26	214	0.9	0.09	128	0.5	0.06	123	0.5	0.07	19	0.1	0.02
18–25	8,302	24.2	0.47	634	1.8	0.13	552	1.6	0.13	715	2.1	0.16	52	0.2	0.04
≥ 26	20,208	9.5	0.22	2,391	1.1	0.07	1,047	0.5	0.04	1,002	0.5	0.04	281	0.1	0.02
26–34	6,891	17.4	0.51	790	2.0	0.18	383	1.0	0.11	554	1.4	0.16	49	0.1	0.04
≥ 35	13,317	7.7	0.23	1,600	0.9	0.08	664	0.4	0.05	448	0.3	0.03	232	0.1	0.03
35–39	2,619	12.6	0.63	259	1.2	0.17	125	0.6	0.13	181	0.9	0.15	62	0.3	0.11
40–44	2,009	10.1	0.58	231	1.2	0.19	90	0.5	0.12	91	0.5	0.13	21	0.1	0.05
45–49	1,805	9.0	0.54	230	1.1	0.20	121	0.6	0.15	71	0.4	0.11	14	0.1	0.04
50–54	1,892	9.0	0.78	207	1.0	0.27	129	0.6	0.17	65	0.3	0.15	62	0.3	0.13
55–59	2,089	9.5	0.79	269	1.2	0.32	115	0.5	0.20	22	0.1	0.07	49	0.2	0.11
60–64	1,421	7.1	0.65	169	0.8	0.24	18	0.1	0.07	11	0.1	0.05	23	0.1	0.10
≥ 65	1,482	3.0	0.30	235	0.5	0.14	67	0.1	0.06	7	0.0[f]	0.01	[g]	[g]	[g]
Race/ethnicity[d]															
White	19,760	11.6	0.24	2,190	1.3	0.08	1,351	0.8	0.06	1,466	0.9	0.06	277	0.2	0.03
Black	4,308	13.1	0.53	322	1.0	0.12	97	0.3	0.07	72	0.2	0.06	37	0.1	0.05
Hispanic	4,500	9.8	0.40	550	1.2	0.16	230	0.5	0.07	226	0.5	0.09	37	0.1	0.04
American Indian or Alaska Native	256	17.6	1.93	21	1.4	0.47	7	0.5	0.30	16	1.1	0.46	[g]	[g]	[g]

Source: Center for Behavioral Health Statistics and Quality. 2017 National Survey on Drug Use and Health (NSDUH). Substance Abuse and Mental Health Services Administration (SAMSHA), Rockville, MD.

Abbreviation: SE, standard error.

[a]Illicit drug use includes the use of marijuana, cocaine (including crack), heroin, hallucinogens, inhalants, or methamphetamine.

[b]Misuse of prescription drugs is defined as use in any way not directed by a doctor, including use without a prescription of one's own medication; use in greater amounts, more often, or longer than told to take a drug; or use in any other way not directed by a doctor. Prescription drugs do not include over-the-counter drugs.

[c]This category includes heroin use, prescription pain reliever misuse, or both; therefore the numbers for heroin use and prescription pain reliever misuse do not add to those for opioid misuse because of poly-drug use. This category includes misuse of prescription fentanyl but does not include illicitly manufactured fentanyl.

[d]All race/ethnicity categories other than "Hispanic" are non-Hispanic. Data on two or more races are not included.

[e]County type was determined according to the "Rural-Urban Continuum Codes", a product of the U.S. Department of Agriculture: https://www.ers.usda.gov/data-products/rural-urban-continuum-codes.aspx.

[f]Percentages are rounded to the nearest tenth. Because of the rounding, some percentages equal to 0.0 are displayed. These prevalence estimates are rounded down from < 0.05 percent and do not represent an absence of persons displaying a particular characteristic.

[g]Fewer than 500 persons.

[h]Low precision, no estimate reported.

TABLE 2A **Self-reported prevalence of illicit drug use[a] and prescription drug misuse[b] in the <u>past month</u>, persons 12+ years old, numbers in thousands — United States, 2017**

CONTINUED

Socio-demographic characteristic	All illicit drug use and prescription drug misuse			Prescription pain relievers			Prescription tranquilizers			Prescription stimulants			Prescription sedatives		
	Number	%	SE	Number	%	SE	Number	%	SE	Number	%	SE	Number	%	SE
Native Hawaiian or other Pacific Islander	115	10.4	3.08	6	0.6	0.40	1	0.1	0.07	1	0.1	0.07	g	g	g
Asian	677	4.5	0.45	55	0.4	0.11	10	0.1	0.04	34	0.2	0.09	g	g	g
U.S. census region of residence															
Northeast	5,535	11.5	0.40	541	1.1	0.16	328	0.7	0.11	354	0.7	0.10	66	0.1	0.04
Midwest	6,102	10.7	0.34	649	1.1	0.11	452	0.8	0.09	544	1.0	0.08	46	0.1	0.03
South	9,605	9.4	0.27	1,335	1.3	0.10	671	0.7	0.05	613	0.6	0.06	143	0.1	0.03
West	9,233	14.3	0.51	714	1.1	0.13	277	0.4	0.07	329	0.5	0.08	98	0.2	0.05
County type[e]															
Large metropolitan	17,948	11.7	0.27	1,720	1.1	0.09	982	0.6	0.05	1,117	0.7	0.06	217	0.1	0.03
Small metropolitan	8,879	11.1	0.30	1,058	1.3	0.10	496	0.6	0.06	545	0.7	0.07	96	0.1	0.03
Non-metropolitan	3,648	9.3	0.40	461	1.2	0.13	249	0.6	0.09	178	0.5	0.06	39	0.1	0.04
Urbanized	1,807	10.8	0.64	185	1.1	0.16	85	0.5	0.11	95	0.6	0.09	11	0.1	0.05
Less Urbanized	1,631	8.6	0.59	238	1.3	0.20	128	0.7	0.14	71	0.4	0.08	25	0.1	0.06
Completely Rural	210	6.2	0.89	37	1.1	0.39	36	1.1	0.42	12	0.4	0.19	2	0.1	0.06

Source: Center for Behavioral Health Statistics and Quality. 2017 National Survey on Drug Use and Health (NSDUH). Substance Abuse and Mental Health Services Administration (SAMSHA), Rockville, MD.

Abbreviation: SE, standard error.

[a] Illicit drug use includes the use of marijuana, cocaine (including crack), heroin, hallucinogens, inhalants, or methamphetamine.

[b] Misuse of prescription drugs is defined as use in any way not directed by a doctor, including use without a prescription of one's own medication; use in greater amounts, more often, or longer than told to take a drug; or use in any other way not directed by a doctor. Prescription drugs do not include over-the-counter drugs.

[c] This category includes heroin use, prescription pain reliever misuse, or both; therefore the numbers for heroin use and prescription pain reliever misuse do not add to those for opioid misuse because of poly-drug use. This category includes misuse of prescription fentanyl but does not include illicitly manufactured fentanyl.

[d] All race/ethnicity categories other than "Hispanic" are non-Hispanic. Data on two or more races are not included.

[e] County type was determined according to the "Rural-Urban Continuum Codes", a product of the U.S. Department of Agriculture: https://www.ers.usda.gov/data-products/rural-urban-continuum-codes.aspx.

[f] Percentages are rounded to the nearest tenth. Because of the rounding, some percentages equal to 0.0 are displayed. These prevalence estimates are rounded down from < 0.05 percent and do not represent an absence of persons displaying a particular characteristic.

[g] Fewer than 500 persons.

[h] Low precision, no estimate reported.

TABLE 2A

Self-reported prevalence of illicit drug use[a] and prescription drug misuse[b] in the <u>past month</u>, persons 12+ years old, numbers in thousands — United States, 2017

CONTINUED

Socio-demographic characteristic	Marijuana			Heroin			Opioids[c] (heroin use or prescription pain reliever misuse)			Cocaine			Methamphetamine		
	Number	%	SE	Number	%	SE	Number	%	SE	Number	%	SE	Number	%	SE
All	25,997	9.6	0.18	494	0.2	0.02	3,549	1.3	0.06	2,167	0.8	0.05	774	0.3	0.03
Gender															
Male	15,720	11.9	0.28	369	0.3	0.04	1,996	1.5	0.10	1,493	1.1	0.08	515	0.4	0.05
Female	10,277	7.3	0.20	125	0.1	0.02	1,552	1.1	0.08	675	0.5	0.05	259	0.2	0.03
Age (years)															
12–17	1,613	6.5	0.24	2	0.0[f]	0.01	215	0.9	0.09	26	0.1	0.03	16	0.1	0.02
18–25	7,591	22.1	0.46	102	0.3	0.06	695	2.0	0.16	665	1.9	0.14	151	0.4	0.08
≥ 26	16,792	7.9	0.20	390	0.2	0.03	2,638	1.2	0.08	1,476	0.7	0.06	607	0.3	0.03
26–34	5,872	14.8	0.47	194	0.5	0.09	882	2.2	0.19	676	1.7	0.17	156	0.4	0.07
≥ 35	10,920	6.3	0.21	196	0.1	0.02	1,757	1.0	0.08	800	0.5	0.06	451	0.3	0.04
35–39	2,199	10.6	0.58	53	0.3	0.08	301	1.4	0.19	179	0.9	0.20	119	0.6	0.14
40–44	1,746	8.8	0.55	21	0.1	0.04	242	1.2	0.20	80	0.4	0.14	41	0.2	0.07
45–49	1,493	7.4	0.50	16	0.1	0.04	242	1.2	0.20	124	0.6	0.16	61	0.3	0.09
50–54	1,500	7.1	0.70	43	0.2	0.10	242	1.2	0.28	147	0.7	0.23	94	0.4	0.14
55–59	1,577	7.2	0.68	63	0.3	0.13	326	1.5	0.34	164	0.8	0.26	66	0.3	0.14
60–64	1,238	6.2	0.62	[g]	0.0[g]	0.00[g]	169	0.8	0.24	21	0.1	0.07	61	0.3	0.15
≥ 65	1,168	2.4	0.26	[g]	0.0[g]	0.00[g]	235	0.5	0.14	83	0.2	0.09	9	0.0[f]	0.01
Race/ethnicity[d]															
White	16,808	9.8	0.22	387	0.2	0.03	2,434	1.4	0.08	1,284	0.8	0.06	564	0.3	0.04
Black	3,808	11.6	0.49	29	0.1	0.04	345	1.1	0.12	356	1.1	0.23	22	0.1	0.03
Hispanic	3,718	8.1	0.36	39	0.1	0.04	573	1.3	0.17	352	0.8	0.10	138	0.3	0.08
American Indian or Alaska Native	225	15.5	1.90	3	0.2	0.16	23	1.6	0.49	18	1.3	0.47	21	1.4	0.48
Native Hawaiian or other Pacific Islander	101	9.1	2.96	[g]	0.0[f]	0.00	6	0.6	0.40	[h]	[h]	[h]	[h]	[h]	[h]
Asian	557	3.7	0.42	17	0.1	0.09	69	0.5	0.14	48	0.3	0.15	7	0.0[f]	0.04

Source: Center for Behavioral Health Statistics and Quality. 2017 National Survey on Drug Use and Health (NSDUH). Substance Abuse and Mental Health Services Administration (SAMSHA), Rockville, MD.

Abbreviation: SE, standard error.

[a] Illicit drug use includes the use of marijuana, cocaine (including crack), heroin, hallucinogens, inhalants, or methamphetamine.

[b] Misuse of prescription drugs is defined as use in any way not directed by a doctor, including use without a prescription of one's own medication; use in greater amounts, more often, or longer than told to take a drug; or use in any other way not directed by a doctor. Prescription drugs do not include over-the-counter drugs.

[c] This category includes heroin use, prescription pain reliever misuse, or both; therefore the numbers for heroin use and prescription pain reliever misuse do not add to those for opioid misuse because of poly-drug use. This category includes misuse of prescription fentanyl but does not include illicitly manufactured fentanyl.

[d] All race/ethnicity categories other than "Hispanic" are non-Hispanic. Data on two or more races are not included.

[e] County type was determined according to the "Rural-Urban Continuum Codes", a product of the U.S. Department of Agriculture: https://www.ers.usda.gov/data-products/rural-urban-continuum-codes.aspx.

[f] Percentages are rounded to the nearest tenth. Because of the rounding, some percentages equal to 0.0 are displayed. These prevalence estimates are rounded down from < 0.05 percent and do not represent an absence of persons displaying a particular characteristic.

[g] Fewer than 500 persons.

[h] Low precision, no estimate reported.

TABLE 2A

Self-reported prevalence of illicit drug use[a] and prescription drug misuse[b] in the past month, persons 12+ years old, numbers in thousands — United States, 2017

CONTINUED

Socio-demographic characteristic	Marijuana			Heroin			Opioids[c] (heroin use or prescription pain reliever misuse)			Cocaine			Methamphetamine		
	Number	%	SE	Number	%	SE	Number	%	SE	Number	%	SE	Number	%	SE
U.S. census region of residence															
Northeast	4,721	9.8	0.37	160	0.3	0.07	657	1.4	0.17	469	1.0	0.14	32	0.1	0.03
Midwest	5,164	9.1	0.30	104	0.2	0.05	720	1.3	0.11	346	0.6	0.08	171	0.3	0.06
South	7,964	7.8	0.25	186	0.2	0.04	1,428	1.4	0.10	699	0.7	0.07	274	0.3	0.05
West	8,149	12.6	0.47	46	0.1	0.02	744	1.2	0.13	653	1.0	0.11	297	0.5	0.08
County type[e]															
Large metropolitan	15,284	10.0	0.26	286	0.2	0.03	1,900	1.2	0.09	1,373	0.9	0.07	314	0.2	0.03
Small metropolitan	7,595	9.5	0.28	159	0.2	0.04	1,158	1.5	0.11	549	0.7	0.07	244	0.3	0.05
Non-metropolitan	3,118	8.0	0.36	49	0.1	0.04	490	1.3	0.13	245	0.6	0.14	216	0.6	0.10
Urbanized	1,569	9.3	0.61	21	0.1	0.05	197	1.2	0.17	154	0.9	0.25	58	0.3	0.11
Less Urbanized	1,378	7.3	0.51	29	0.2	0.07	256	1.3	0.21	82	0.4	0.18	127	0.7	0.17
Completely Rural	172	5.0	0.76	[g]	0.0[g]	0.00[g]	37	1.1	0.39	9	0.3	0.14	31	0.9	0.43

Source: Center for Behavioral Health Statistics and Quality. 2017 National Survey on Drug Use and Health (NSDUH). Substance Abuse and Mental Health Services Administration (SAMSHA), Rockville, MD.

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[a]Illicit drug use includes the use of marijuana, cocaine (including crack), heroin, hallucinogens, inhalants, or methamphetamine.

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[c]This category includes heroin use, prescription pain reliever misuse, or both; therefore the numbers for heroin use and prescription pain reliever misuse do not add to those for opioid misuse because of poly-drug use. This category includes misuse of prescription fentanyl but does not include illicitly manufactured fentanyl.

[d]All race/ethnicity categories other than "Hispanic" are non-Hispanic. Data on two or more races are not included.

[e]County type was determined according to the "Rural-Urban Continuum Codes", a product of the U.S. Department of Agriculture: https://www.ers.usda.gov/data-products/rural-urban-continuum-codes.aspx.

[f]Percentages are rounded to the nearest tenth. Because of the rounding, some percentages equal to 0.0 are displayed. These prevalence estimates are rounded down from < 0.05 percent and do not represent an absence of persons displaying a particular characteristic.

[g]Fewer than 500 persons.

[h]Low precision, no estimate reported.

TABLE 2B

Self-reported prevalence of illicit drug use[a] and prescription drug misuse[b] in the past year, persons 12+ years old, numbers in thousands — United States, 2017

Socio-demographic characteristic	All illicit drug use and prescription drug misuse			Prescription pain relievers			Prescription tranquilizers			Prescription stimulants			Prescription sedatives			Prescription benzodiazepines		
	Number	%	SE	Number	%	SE	Number	%	SE	Number	%	SE	Number	%	SE	Number	%	SE
All	51,795	19.0	0.24	11,077	4.1	0.10	5,944	2.2	0.08	5,839	2.1	0.07	1,351	0.5	0.04	5,674	2.1	0.07
Gender																		
Male	29,058	22.0	0.36	6,018	4.6	0.16	3,001	2.3	0.11	3,466	2.6	0.11	629	0.5	0.06	2,900	2.2	0.11
Female	22,736	16.2	0.29	5,059	3.6	0.13	2,943	2.1	0.1	2,372	1.7	0.08	722	0.5	0.06	2,774	2.0	0.10
Age (years)																		
12–17	4,069	16.3	0.37	767	3.1	0.16	458	1.8	0.13	452	1.8	0.14	74	0.3	0.05	441	1.8	0.13
18–25	13,522	39.4	0.54	2,460	7.2	0.26	1,880	5.5	0.23	2,545	7.4	0.29	199	0.6	0.07	1,830	5.3	0.23
≥ 26	34,203	16.1	0.27	7,850	3.7	0.12	3,605	1.7	0.09	2,841	1.3	0.07	1,079	0.5	0.05	3,403	1.6	0.08
26–34	11,345	28.7	0.60	2,370	6.0	0.29	1,327	3.4	0.23	1,602	4.1	0.27	216	0.5	0.09	—	—	—
≥ 35	22,859	13.2	0.30	5,480	3.2	0.13	2,278	1.3	0.09	1,239	0.7	0.06	862	0.5	0.06	—	—	—
35–39	4,518	21.7	0.75	1,085	5.2	0.37	450	2.2	0.25	435	2.1	0.24	118	0.6	0.14	422	2.0	0.24
40–44	3,391	17.1	0.75	798	4.0	0.36	352	1.8	0.25	292	1.5	0.22	76	0.4	0.13	307	1.6	0.24
45–49	3,190	15.9	0.68	874	4.3	0.37	349	1.7	0.24	216	1.1	0.18	87	0.4	0.11	340	1.7	0.25
50–54	3,124	14.9	0.99	708	3.4	0.46	304	1.4	0.27	128	0.6	0.19	216	1.0	0.26	261	1.2	0.25
55–59	3,298	15.1	0.97	652	3.0	0.43	377	1.7	0.32	104	0.5	0.20	145	0.7	0.20	336	1.5	0.31
60–64	2,506	12.5	0.86	585	2.9	0.46	124	0.6	0.20	52	0.3	0.11	135	0.7	0.22	131	0.7	0.21
≥ 65	2,833	5.7	0.44	777	1.6	0.22	321	0.6	0.15	13	0.0[f]	0.02	85	0.2	0.08	344	0.7	0.17
Race/ethnicity[d]																		
White	33,709	19.7	0.30	7,481	4.4	0.14	4,431	2.6	0.11	4,514	2.6	0.10	1,044	0.6	0.06	4,224	2.5	0.10

Source: Center for Behavioral Health Statistics and Quality, 2017 National Survey on Drug Use and Health (NSDUH). Substance Abuse and Mental Health Services Administration (SAMSHA), Rockville, MD.

Abbreviation: SE, standard error.

a Illicit drug use includes the use of marijuana, cocaine (including crack), heroin, hallucinogens, inhalants, or methamphetamine.

b Misuse of prescription drugs is defined as use in any way not directed by a doctor, including use without a prescription of one's own medication; use in greater amounts, more often, or longer than told to take a drug; or use in any other way not directed by a doctor. Prescription drugs do not include over-the-counter drugs.

c This category includes heroin use, prescription pain reliever misuse, or both; therefore the numbers for heroin use and prescription pain reliever misuse do not add to those for opioid misuse because of poly-drug use. This category includes misuse of prescription fentanyl but does not include illicitly manufactured fentanyl.

d All race/ethnicity categories other than "Hispanic" are non-Hispanic. Data on two or more races are not included.

e County type was determined according to the "Rural-Urban Continuum Codes", a product of the U.S. Department of Agriculture: https://www.ers.usda.gov/data-products/rural-urban-continuum-codes.aspx.

f Percentages are rounded to the nearest tenth. Because of the rounding, some percentages equal to 0.0 are displayed. These prevalence estimates are rounded down from < 0.05 percent and do not represent an absence of persons displaying a particular characteristic.

g Low precision, no estimate reported.

h Fewer than 500 persons.

i Age category was not available in SAMSHA report.

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| TABLE 2B | **Self-reported prevalence of illicit drug use[a] and prescription drug misuse[b] in the past year, persons 12+ years old, numbers in thousands — United States, 2017** |

Socio-demographic characteristic	All illicit drug use and prescription drug misuse			Prescription pain relievers			Prescription tranquilizers			Prescription stimulants			Prescription sedatives			Prescription benzodiazepines		
	Number	%	SE	Number	%	SE	Number	%	SE	Number	%	SE	Number	%	SE	Number	%	SE
Black	6,739	20.5	0.64	1,136	3.5	0.24	396	1.2	0.13	254	0.8	0.10	82	0.2	0.08	391	1.2	0.14
Hispanic	7,991	17.5	0.53	1,833	4.0	0.27	841	1.8	0.15	763	1.7	0.14	185	0.4	0.08	794	1.7	0.15
American Indian or Alaska Native	426	29.3	2.74	84	5.7	1.05	22	1.5	0.52	24	1.7	0.52	4	0.3	0.25	15	1.0	0.35
Native Hawaiian or other Pacific Islander	140	12.7	3.14	24	2.2	0.87	17	1.6	0.71	16	1.4	0.71	g	g	g	17	1.6	0.71
Asian	1,440	9.5	0.72	273	1.8	0.31	104	0.7	0.29	165	1.1	0.22	10	0.1	0.04	100	0.7	0.29
U.S. census region of residence																		
Northeast	9,060	18.8	0.50	1,715	3.6	0.23	1,088	2.3	0.18	1,137	2.4	0.19	205	0.4	0.08	1,054	2.2	0.18
Midwest	10,628	18.6	0.46	2,423	4.2	0.20	1,362	2.4	0.15	1,604	2.8	0.17	208	0.4	0.06	1,306	2.3	0.15
South	17,034	16.6	0.36	4,105	4.0	0.15	2,276	2.2	0.12	1,959	1.9	0.11	524	0.5	0.07	2,190	2.1	0.12
West	15,072	23.4	0.61	2,834	4.4	0.25	1,218	1.9	0.17	1,139	1.8	0.15	415	0.6	0.11	1,124	1.7	0.17
County type[e]																		
Large metropolitan	30,500	19.9	0.34	6,048	3.9	0.14	3,380	2.2	0.11	3,454	2.3	0.10	785	0.5	0.06	3,199	2.1	0.11
Small metropolitan	15,115	18.9	0.39	3,458	4.3	0.18	1,773	2.2	0.12	1,729	2.2	0.12	385	0.5	0.07	1,711	2.1	0.12
Non-metropolitan	6,179	15.8	0.52	1,571	4.0	0.24	792	2.0	0.17	656	1.7	0.14	181	0.5	0.10	763	2.0	0.17
Urbanized	2,864	17.0	0.78	654	3.9	0.33	326	1.9	0.23	330	2.0	0.22	42	0.3	0.10	313	1.9	0.23
Less Urbanized	2,832	15.0	0.75	771	4.1	0.36	401	2.1	0.27	273	1.4	0.19	108	0.6	0.15	392	2.1	0.28
Completely Rural	484	14.2	1.75	146	4.3	0.95	64	1.9	0.48	53	1.6	0.49	31	0.9	0.50	58	1.7	0.45

Source: Center for Behavioral Health Statistics and Quality. 2017 National Survey on Drug Use and Health (NSDUH). Substance Abuse and Mental Health Services Administration (SAMSHA), Rockville, MD.

Abbreviation: SE, standard error.

[a] Illicit drug use includes the use of marijuana, cocaine (including crack), heroin, hallucinogens, inhalants, or methamphetamine.

[b] Misuse of prescription drugs is defined as use in any way not directed by a doctor, including use without a prescription of one's own medication; use in greater amounts, more often, or longer than told to take a drug; or use in any other way not directed by a doctor. Prescription drugs do not include over-the-counter drugs.

[c] This category includes heroin use, prescription pain reliever misuse, or both; therefore the numbers for heroin use and prescription pain reliever misuse do not add to those for opioid misuse because of poly-drug use. This category includes misuse of prescription fentanyl but does not include illicitly manufactured fentanyl.

[d] All race/ethnicity categories other than "Hispanic" are non-Hispanic. Data on two or more races are not included.

[e] County type was determined according to the "Rural-Urban Continuum Codes", a product of the U.S. Department of Agriculture: www.ers.usda.gov/data-products/rural-urban-continuum-codes.aspx.

[f] Percentages are rounded to the nearest tenth. Because of the rounding, some percentages equal to 0.0 are displayed. These prevalence estimates are rounded down from < 0.05 percent and do not represent an absence of persons displaying a particular characteristic.

[g] Low precision, no estimate reported.

[h] Fewer than 500 persons.

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TABLE 2B **Self-reported prevalence of illicit drug use[a] and prescription drug misuse[b] in the past year, persons 12+ years old, numbers in thousands — United States, 2017**

Socio-demographic characteristic	Marijuana			Heroin			Opioids[c] (heroin or prescription pain relievers)			Cocaine			Methamphetamine		
	Number	%	SE	Number	%	SE	Number	%	SE	Number	%	SE	Number	%	SE
All	40,935	15.0	0.22	886	0.3	0.03	11,401	4.2	0.1	5,943	2.2	0.08	1,633	0.6	0.04
Gender															
Male	23,451	17.8	0.34	600	0.5	0.05	6,252	4.7	0.17	3,964	3.0	0.13	1,048	0.8	0.07
Female	17,483	12.5	0.25	286	0.2	0.03	5,148	3.7	0.13	1,979	1.4	0.09	585	0.4	0.04
Age (years)															
12–17	3,094	12.4	0.33	14	0.1	0.02	769	3.1	0.16	127	0.5	0.06	48	0.2	0.04
18–25	11,956	34.9	0.53	214	0.6	0.08	2,494	7.3	0.26	2,128	6.2	0.26	375	1.1	0.11
≥ 26	25,885	12.2	0.24	658	0.3	0.03	8,138	3.8	0.12	3,688	1.7	0.09	1,210	0.6	0.05
26–34	9,240	23.4	0.56	312	0.8	0.11	2,467	6.2	0.29	1,768	4.5	0.28	421	1.1	0.12
≥ 35	16,645	9.6	0.26	346	0.2	0.03	5,761	3.3	0.13	1,920	1.1	0.09	789	0.5	0.05
35–39	3,415	16.4	0.72	118	0.6	0.12	1,133	5.4	0.38	482	2.3	0.29	248	1.2	0.2
40–44	2,594	13.1	0.68	54	0.3	0.08	821	4.1	0.36	225	1.1	0.20	102	0.5	0.12
45–49	2,307	11.5	0.60	16	0.1	0.04	874	4.3	0.37	318	1.6	0.25	105	0.5	0.12
50–54	2,294	10.9	0.88	83	0.4	0.16	761	3.6	0.48	320	1.5	0.35	149	0.7	0.2
55–59	2,318	10.6	0.83	75	0.3	0.14	721	3.3	0.44	327	1.5	0.34	88	0.4	0.16
60–64	1,872	9.4	0.74	h	0.0f	0.00	585	2.9	0.46	98	0.5	0.17	73	0.4	0.16
≥ 65	1,844	3.7	0.34	h	0.0f	0.00	777	1.6	0.22	150	0.3	0.11	24	0.0f	0.02
Race/ethnicity[d]															
White	26,654	15.6	0.27	712	0.4	0.04	7,747	4.5	0.14	3,854	2.3	0.10	1,164	0.7	0.05

Source: Center for Behavioral Health Statistics and Quality. 2017 National Survey on Drug Use and Health (NSDUH). Substance Abuse and Mental Health Services Administration (SAMSHA), Rockville, MD.

Abbreviation: SE, standard error.

[a] Illicit drug use includes the use of marijuana, cocaine (including crack), heroin, hallucinogens, inhalants, or methamphetamine.

[b] Misuse of prescription drugs is defined as use in any way not directed by a doctor, including use without a prescription of one's own medication; use in greater amounts, more often, or longer than told to take a drug; or use in any other way not directed by a doctor. Prescription drugs do not include over-the-counter drugs.

[c] This category includes heroin use, prescription pain reliever misuse, or both; therefore the numbers for heroin use and prescription pain reliever misuse do not add to those for opioid misuse because of poly-drug use. This category includes misuse of prescription fentanyl but does not include illicitly manufactured fentanyl.

[d] All race/ethnicity categories other than "Hispanic" are non-Hispanic. Data on two or more races are not included.

[e] County type was determined according to the "Rural-Urban Continuum Codes", a product of the U.S. Department of Agriculture: www.ers.usda.gov/data-products/rural-urban-continuum-codes.aspx.

[f] Percentages are rounded to the nearest tenth. Because of the rounding, some percentages equal to 0.0 are displayed. These prevalence estimates are rounded down from < 0.05 percent and do not represent an absence of persons displaying a particular characteristic.

[g] Low precision, no estimate reported.

[h] Fewer than 500 persons.

[i] Age category was not available in SAMSHA report.

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TABLE 2B **Self-reported prevalence of illicit drug use[a] and prescription drug misuse[b] in the past year, persons 12+ years old, numbers in thousands — United States, 2017**

Socio-demographic characteristic	Marijuana			Heroin			Opioids[c] (heroin or prescription pain relievers)			Cocaine			Methamphetamine		
	Number	%	SE	Number	%	SE	Number	%	SE	Number	%	SE	Number	%	SE
Black	5,675	17.3	0.59	44	0.1	0.05	1,162	3.5	0.24	657	2.0	0.27	58	0.2	0.06
Hispanic	5,954	13.0	0.47	72	0.2	0.04	1,842	4.0	0.27	1,008	2.2	0.19	280	0.6	0.11
American Indian or Alaska Native	354	24.3	2.23	11	0.7	0.31	88	6.1	1.08	52	3.6	0.82	62	4.3	1.56
Native Hawaiian or other Pacific Islander	125	11.3	2.99	h	0.0[f]	0.00	24	2.2	0.87	g	g	g	11	1.0	0.69
Asian	1,045	6.9	0.59	26	0.2	0.10	289	1.9	0.32	140	0.9	0.22	17	0.1	0.07
U.S. census region of residence															
Northeast	7,213	15.0	0.46	234	0.5	0.08	1,804	3.8	0.24	1,131	2.4	0.21	75	0.2	0.04
Midwest	8,317	14.6	0.39	204	0.4	0.06	2,509	4.4	0.21	1,144	2.0	0.14	334	0.6	0.07
South	13,002	12.7	0.32	326	0.3	0.05	4,228	4.1	0.16	1,962	1.9	0.12	632	0.6	0.07
West	12,403	19.2	0.56	122	0.2	0.04	2,859	4.4	0.25	1,706	2.6	0.20	592	0.9	0.12
County type[e]															
Large metropolitan	24,304	15.9	0.32	489	0.3	0.04	6,230	4.1	0.15	3,724	2.4	0.12	640	0.4	0.05
Small metropolitan	11,899	14.9	0.35	306	0.4	0.05	3,583	4.5	0.19	1,587	2.0	0.12	601	0.8	0.08
Non-metropolitan	4,732	12.1	0.44	91	0.2	0.05	1,588	4.1	0.24	632	1.6	0.18	393	1.0	0.13
Urbanized	2,247	13.4	0.71	32	0.2	0.06	662	3.9	0.33	340	2.0	0.31	146	0.9	0.19
Less Urbanized	2,145	11.3	0.62	58	0.3	0.09	780	4.1	0.36	257	1.4	0.24	211	1.1	0.20
Completely Rural	340	10.0	1.34	2	0.1	0.06	146	4.3	0.95	35	1.0	0.28	36	1.1	0.43

Source: Center for Behavioral Health Statistics and Quality. 2017 National Survey on Drug Use and Health (NSDUH). Substance Abuse and Mental Health Services Administration (SAMSHA), Rockville, MD.

Abbreviation: SE, standard error.

[a] Illicit drug use includes the use of marijuana, cocaine (including crack), heroin, hallucinogens, inhalants, or methamphetamine.

[b] Misuse of prescription drugs is defined as use in any way not directed by a doctor, including use without a prescription of one's own medication; use in greater amounts, more often, or longer than told to take a drug; or use in any other way not directed by a doctor. Prescription drugs do not include over-the-counter drugs.

[c] This category includes heroin use, prescription pain reliever misuse, or both; therefore the numbers for heroin use and prescription pain reliever misuse do not add to those for opioid misuse because of poly-drug use. This category includes misuse of prescription fentanyl but does not include illicitly manufactured fentanyl.

[d] All race/ethnicity categories other than "Hispanic" are non-Hispanic. Data on two or more races are not included.

[e] County type was determined according to the "Rural-Urban Continuum Codes", a product of the U.S. Department of Agriculture: www.ers.usda.gov/data-products/rural-urban-continuum-codes.aspx.

[f] Percentages are rounded to the nearest tenth. Because of the rounding, some percentages equal to 0.0 are displayed. These prevalence estimates are rounded down from < 0.05 percent and do not represent an absence of persons displaying a particular characteristic.

[g] Low precision, no estimate reported.

[h] Fewer than 500 persons.

[i] Age category was not available in SAMSHA report.

TABLE 2C **Self-reported prevalence of any prescription drug use (including misuse[a]) in the past year, persons 12+ years old, by drug type, numbers in thousands — United States, 2017**

Socio-demographic characteristic	Prescription pain relievers			Prescription tranquilizers			Prescription stimulants			Prescription sedatives		
	Number	%	SE	Number	%	SE	Number	%	SE	Number	%	SE
All	90,799	33.4	0.29	38,168	14.0	0.23	18,629	6.8	0.14	16,741	6.2	0.15
Gender												
Male	40,806	30.9	0.39	13,687	10.4	0.27	9,282	7.0	0.19	6,605	5.0	0.21
Female	49,993	35.7	0.41	24,480	17.5	0.34	9,347	6.7	0.18	10,136	7.2	0.23
Age (in years)												
12-17	4,346	17.4	0.38	1,139	4.6	0.20	1,787	7.2	0.25	563	2.3	0.14
18-25	10,262	29.9	0.45	4,098	11.9	0.33	5,038	14.7	0.38	1,151	3.4	0.19
≥ 26	76,191	35.8	0.35	32,931	15.5	0.27	11,805	5.5	0.16	15,027	7.1	0.19
Race/ethnicity[b]												
White	61,125	35.8	0.36	29,486	17.3	0.30	13,912	8.1	0.18	12,712	7.4	0.20
Black	11,330	34.5	0.81	2,757	8.4	0.47	1,194	3.6	0.27	1,463	4.5	0.35
Hispanic	12,572	27.5	0.70	4,353	9.5	0.47	2,397	5.2	0.34	1,768	3.9	0.34
American Indian or Alaska Native	596	41.0	3.12	183	12.6	1.96	134	9.2	2.11	133	9.1	2.49
Native Hawaiian or other Pacific Islander	476	43.0	5.24	76	6.9	2.43	57	5.1	1.86	46	4.2	2.10
Asian	2,867	18.9	1.12	620	4.1	0.61	490	3.2	0.44	293	1.9	0.55
U.S. census region of residence												
Northeast	13,886	28.9	0.70	6,480	13.5	0.51	3,014	6.3	0.35	2,728	5.7	0.37
Midwest	19,536	34.3	0.58	8,259	14.5	0.42	4,272	7.5	0.30	3,098	5.4	0.27
South	35,961	35.1	0.46	15,302	14.9	0.37	7,542	7.4	0.22	6,997	6.8	0.28
West	21,416	33.2	0.64	8,127	12.6	0.47	3,800	5.9	0.27	3,917	6.1	0.32
County type[c]												
Large metropolitan	48,216	31.5	0.39	19,940	13.0	0.30	10,482	6.8	0.19	8,757	5.7	0.22
Small metropolitan	28,437	35.6	0.49	12,547	15.7	0.44	5,754	7.2	0.25	5,566	7.0	0.30
Non-metropolitan	14,146	36.1	0.69	5,680	14.5	0.49	2,393	6.1	0.31	2,418	6.2	0.37
Urbanized	6,061	36.1	1.09	2,254	13.4	0.70	1,078	6.4	0.47	925	5.5	0.51
Less Urbanized	6,859	36.2	0.98	2,891	15.3	0.73	1,121	5.9	0.44	1,205	6.4	0.54
Completely Rural	1,226	36.0	2.33	536	15.7	1.40	193	5.7	0.91	288	8.4	1.57

Source: Center for Behavioral Health Statistics and Quality. 2017 National Survey on Drug Use and Health (NSDUH). Substance Abuse and Mental Health Services Administration (SAMSHA), Rockville, MD.

Abbreviation: SE, standard error.

[a]Misuse of prescription drugs is defined as use in any way not directed by a doctor, including use without a prescription of one's own medication; use in greater amounts, more often, or longer than told to take a drug; or use in any other way not directed by a doctor. Prescription drugs do not include over-the-counter drugs.

[b]All race/ethnicity categories other than "Hispanic" are non-Hispanic. Data on two or more races are not included.

[c]County type was determined according to the "Rural-Urban Continuum Codes", a product of the U.S. Department of Agriculture: https://www.ers.usda.gov/data-products/rural-urban-continuum-codes.aspx.

TABLE 2D

Self-reported prevalence of past year initiation of illicit drug use and prescription drug misuse[a], persons 12+ years old, by drug type, numbers in thousands — United States, 2017

Socio-demographic characteristic	Prescription pain relievers			Prescription tranquilizers			Prescription stimulants			Prescription sedatives			Marijuana			Heroin			Cocaine			Methamphetamine		
	No.	%	SE	No.	%	SE	No.	%	SE	No.	%	SE	No.	%	SE	No.	%	SE	No.	%	SE	No.	%	SE
All	2,010	0.7	0.04	1,446	0.5	0.04	1,192	0.4	0.03	271	0.1	0.02	3,033	1.1	0.04	81	0.0[b]	0.01	1,037	0.4	0.03	195	0.1	0.01
Age (years)																								
12–17	316	1.3	0.11	223	0.9	0.09	217	0.9	0.10	34	0.1	0.04	1,204	4.8	0.21	9	0.0[b]	0.02	98	0.4	0.05	27	0.1	0.03
18–25	465	1.4	0.12	473	1.4	0.12	581	1.7	0.14	51	0.1	0.03	1,304	3.8	0.21	46	0.1	0.04	729	2.1	0.15	95	0.3	0.05
≥ 26	1,229	0.6	0.05	749	0.4	0.05	394	0.2	0.04	186	0.1	0.02	525	0.2	0.03	26	0.0[b]	0.01	210	0.1	0.02	73	0.0[b]	0.01

Source: Center for Behavioral Health Statistics and Quality. 2017 National Survey on Drug Use and Health (NSDUH). Substance Abuse and Mental Health Services Administration (SAMSHA), Rockville, MD.

Abbreviations: No., number; SE, standard error.

[a]Misuse of prescription drugs is defined as use in any way not directed by a doctor, including use without a prescription of one's own medication; use in greater amounts, more often, or longer than told to take a drug; or use in any other way not directed by a doctor. Prescription drugs do not include over-the-counter drugs.

[b]Percentages are rounded to the nearest tenth. Because of the rounding, some percentages equal to 0.0 are displayed. These prevalence estimates are rounded down from < 0.05 percent and do not represent an absence of persons displaying a particular characteristic.

TABLE 2E

Self-reported prevalence of substance use disorder[a] for specific substances in the past year, persons 12+ years old, numbers in thousands — United States, 2017

Socio-demographic characteristic	All illicit drugs[b]			Prescription pain relievers			Prescription tranquilizers			Prescription stimulants			Prescription sedatives		
	Number	%[d]	SE	Number	%	SE	Number	%	SE	Number	%	SE	Number	%	SE
All	7,545	2.8	0.08	1,678	0.6	0.04	739	0.3	0.02	572	0.2	0.02	198	0.1	0.01
Age (years)															
12–17	741	3.0	0.15	99	0.4	0.06	80	0.3	0.06	62	0.2	0.05	10	0.0[e]	0.02
18–25	2,512	7.3	0.27	339	1.0	0.09	278	0.8	0.09	187	0.5	0.06	24	0.1	0.02
≥ 26	4,292	2.0	0.09	1,240	0.6	0.05	380	0.2	0.02	323	0.2	0.02	164	0.1	0.02

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Socio-demographic characteristic	Marijuana			Heroin			Opioids[c] (heroin use or prescription pain reliever misuse)			Cocaine[d]			Methamphetamine		
	Number	%	SE	Number	%	SE	Number	%	SE	Number	%	SE	Number	%	SE
All	4,057	1.5	0.06	652	0.2	0.02	2,110	0.8	0.05	966	0.4	0.03	964	0.4	0.03
Age (in years)															
12–17	557	2.2	0.13	4	0.0[e]	0.01	103	0.4	0.06	19	0.1	0.02	24	0.1	0.03
18–25	1,799	5.2	0.24	165	0.5	0.07	445	1.3	0.11	243	0.7	0.08	188	0.5	0.08
≥ 26	1,701	0.8	0.06	483	0.2	0.03	1,562	0.7	0.05	703	0.3	0.04	751	0.4	0.04

Source: Center for Behavioral Health Statistics and Quality. 2017 National Survey on Drug Use and Health (NSDUH). Substance Abuse and Mental Health Services Administration (SAMSHA), Rockville, MD.

Abbreviation: SE, standard error.

[a]Substance use disorder is defined as meeting criteria for illicit drug dependence or abuse. Dependence or abuse is based on definitions found in the 4th edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV).

[b]Illicit drug use includes the misuse of prescription psychotherapeutics or the use of marijuana, cocaine (including crack), heroin, hallucinogens, inhalants, or methamphetamine.

[c]This category includes prescription fentanyl but does not include illicitly manufactured fentanyl.

[d]Including crack.

[e]Percentages are rounded to the nearest tenth. Because of the rounding, some percentages equal to 0.0 are displayed. These prevalence estimates are rounded down from < 0.05 percent and do not represent an absence of persons displaying a particular characteristic.

TABLE 2F	**Prevalence of self-reported treatment for illicit drug use and prescription drug misuse[a] in the <u>past year</u>, persons 12+ years old, by demographic characteristics, numbers in thousands — United States, 2017**

Socio-demographic characteristic	Any location			Specialty facility[b]		
	Number	%	SE	Number	%	SE
All	2,448	0.9	0.05	1,674	0.6	0.04
Gender						
Male	1,564	1.2	0.09	1,016	0.8	0.07
Female	884	0.6	0.05	658	0.5	0.04
Age (years)						
12–17	143	0.6	0.07	56	0.2	0.04
18–25	442	1.3	0.11	319	0.9	0.09
≥ 26	1,864	0.9	0.06	1,299	0.6	0.05
Race/ethnicity[c]						
White	1,686	1.0	0.06	1,151	0.7	0.05
Black	275	0.8	0.15	208	0.6	0.14
Hispanic	326	0.7	0.12	211	0.5	0.09
American Indian or Alaska Native	59	4.0	1.10	31	2.1	0.75
Native Hawaiian or other Pacific Islander	e	e	e	e	e	e
Asian	23	0.2	0.06	9	0.1	0.03
U.S. census region of residence						
Northeast	412	0.9	0.10	298	0.6	0.08
Midwest	454	0.8	0.09	305	0.5	0.07
South	1,029	1.0	0.09	713	0.7	0.07
West	553	0.9	0.12	357	0.6	0.10
County type[d]						
Large metropolitan	1,266	0.8	0.07	850	0.6	0.06
Small metropolitan	804	1.0	0.09	550	0.7	0.08
Non-metropolitan	378	1.0	0.11	274	0.7	0.10
Urbanized	180	1.1	0.20	131	0.8	0.17
Less Urbanized	176	0.9	0.13	123	0.7	0.12
Completely Rural	23	0.7	0.30	19	0.6	0.29

Source: Center for Behavioral Health Statistics and Quality. 2017 National Survey on Drug Use and Health (NSDUH). Substance Abuse and Mental Health Services Administration (SAMSHA), Rockville, MD.

Abbreviation: SE, standard error.

[a] Illicit or prescription drug treatment refers to treatment received in order to reduce or stop illicit drug use or prescription drug misuse, or for medical problems associated with illicit drug use or prescription drug use. It includes treatment received at any location, such as a hospital (inpatient), rehabilitation facility (inpatient or outpatient), mental health center, emergency room, private doctor's office, self-help group, or prison/jail. Illicit drug use includes the use of marijuana, cocaine (including crack), heroin, hallucinogens, inhalants, or methamphetamine. Prescription drug misuse includes the misuse of prescription pain relievers, tranquilizers, stimulants, and sedatives.

[b] A specialty facility includes a hospital (inpatient only), rehabilitation facility (inpatient or outpatient), or mental health center.

[c] All race/ethnicity categories other than "Hispanic" are non-Hispanic. Data on two or more races are not included.

[d] County type was determined according to the "Rural-Urban Continuum Codes", a product of the U.S. Department of Agriculture: https://www.ers. usda.gov/data-products/rural-urban-continuum-codes.aspx.

[e] Low precision, no estimate reported.

TABLE 2G

Self-reported prevalence of illicit drug use[a] and prescription drug misuse[b] in the past month, persons 12+ years old, numbers in thousands — United States, 2018

Socio-demographic characteristic	All illicit drug use and prescription drug misuse			Prescription pain relievers			Prescription tranquilizers			Prescription stimulants			Prescription sedatives		
	Number	%	SE	Number	%	SE	Number	%	SE	Number	%	SE	Number	%	SE
All	31,918	11.7	0.21	2,852	1.0	0.06	1,634	0.6	0.04	1,670	0.6	0.04	243	0.1	0.02
Gender															
Male	18,542	14.0	0.31	1,434	1.1	0.09	754	0.6	0.06	943	0.7	0.06	128	0.1	0.03
Female	13,376	9.5	0.23	1,418	1.0	0.07	880	0.6	0.06	726	0.5	0.05	115	0.1	0.02
Age (years)															
12–17	2,000	8.0	0.27	161	0.6	0.09	81	0.3	0.05	120	0.5	0.06	9	0.0[f]	0.02
18–25	8,130	23.9	0.48	475	1.4	0.11	395	1.2	0.10	587	1.7	0.14	43	0.1	0.03
≥ 26	21,788	10.1	0.24	2,216	1.0	0.07	1,159	0.5	0.05	963	0.4	0.04	191	0.1	0.02
26-34	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h
≥ 35	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h
35–39	3,116	14.2	0.64	328	1.5	0.21	209	1.0	0.16	212	1.0	0.20	37	0.2	0.07
40–44	2,374	12.1	0.65	264	1.3	0.21	62	0.3	0.09	33	0.2	0.07	13	0.1	0.04
45–49	1,881	9.7	0.55	250	1.3	0.20	86	0.4	0.12	63	0.3	0.10	7	0.0[f]	0.02
50–54	1,733	8.4	0.75	187	0.9	0.26	91	0.4	0.18	18	0.1	0.09	15	0.1	0.06
55–59	1,811	8.3	0.78	218	1.0	0.28	66	0.3	0.12	29	0.1	0.07	20	0.1	0.07
60–64	1,641	8.1	0.79	152	0.7	0.25	128	0.6	0.22	31	0.1	0.11	17	0.1	0.06
≥ 65	1,660	3.2	0.38	191	0.4	0.12	127	0.2	0.11	23	0.0[f]	0.03	39	0.1	0.05
Race/ethnicity[d]															
White	20,532	12.0	0.26	1,951	1.1	0.08	1,268	0.7	0.06	1232	0.7	0.05	196	0.1	0.02
Black	4,514	13.7	0.56	337	1.0	0.16	113	0.3	0.08	112	0.3	0.08	3	0.0[f]	0.01
Hispanic	4,535	9.7	0.41	406	0.9	0.12	206	0.4	0.08	158	0.3	0.06	17	0.0[f]	0.02
American Indian or Alaska Native	290	17.4	2.46	23	1.4	0.44	8	0.5	0.25	6	0.3	0.23	9	0.6	0.45
Native Hawaiian or other Pacific Islander	98	9.4	2.16	12	1.1	0.73	g	g	g	g	g	g	g	g	g
Asian	1,047	6.7	0.82	50	0.3	0.10	9	0.1	0.03	110	0.7	0.22	2	0.0[f]	0.01

Source: Center for Behavioral Health Statistics and Quality. 2018 National Survey on Drug Use and Health (NSDUH). Substance Abuse and Mental Health Services Administration (SAMSHA), Rockville, MD.

Abbreviation: SE, standard error.

[a] Illicit drug use includes the use of marijuana, cocaine (including crack), heroin, hallucinogens, inhalants, or methamphetamine.

[b] Misuse of prescription drugs is defined as use in any way not directed by a doctor, including use without a prescription of one's own medication; use in greater amounts, more often, or longer than told to take a drug; or use in any other way not directed by a doctor. Prescription drugs do not include over-the-counter drugs.

[c] This category includes heroin use, prescription pain reliever misuse, or both; therefore the numbers for heroin use and prescription pain reliever misuse do not add to those for opioid misuse because of poly-drug use. This category includes misuse of prescription fentanyl but does not include illicitly manufactured fentanyl.

[d] All race/ethnicity categories other than "Hispanic" are non-Hispanic. Data on two or more races are not included.

[e] County type was determined according to the "Rural-Urban Continuum Codes," a product of the U.S. Department of Agriculture: https://www.ers.usda.gov/data-products/rural-urban-continuum-codes.aspx.

[f] Percentages are rounded to the nearest tenth. Because of the rounding, some percentages equal to 0.0 are displayed. These prevalence estimates are rounded down from < 0.05 percent and do not represent an absence of persons displaying a particular characteristic.

[g] Low precision, no estimate reported.

[h] Age category was not available in SAMSHA report.

TABLE 2G

Self-reported prevalence of illicit drug use[a] and prescription drug misuse[b] in the past month, persons 12+ years old, numbers in thousands — United States, 2018

CONTINUED

Socio-demographic characteristic	All illicit drug use and prescription drug misuse			Prescription pain relievers			Prescription tranquilizers			Prescription stimulants			Prescription sedatives		
	Number	%	SE	Number	%	SE	Number	%	SE	Number	%	SE	Number	%	SE
U.S. census region of residence															
Northeast	5,741	12.0	0.47	400	0.8	0.11	300	0.6	0.13	275	0.6	0.07	41	0.1	0.03
Midwest	6,352	11.1	0.40	520	0.9	0.13	348	0.6	0.08	452	0.8	0.09	58	0.1	0.03
South	10,101	9.7	0.29	1,336	1.3	0.11	664	0.6	0.07	556	0.5	0.06	92	0.1	0.02
West	9,723	14.9	0.57	595	0.9	0.11	322	0.5	0.07	387	0.6	0.08	52	0.1	0.04
County type[e]															
Large metropolitan	18,588	12.2	0.30	1,511	1.0	0.08	909	0.6	0.06	972	0.6	0.05	118	0.1	0.02
Small metropolitan	9,647	11.8	0.35	889	1.1	0.09	504	0.6	0.07	498	0.6	0.06	63	0.1	0.02
Non-metropolitan	3,682	9.3	0.40	452	1.1	0.15	221	0.6	0.09	200	0.5	0.08	62	0.2	0.07
Urbanized	1,844	10.4	0.68	186	1.1	0.17	100	0.6	0.15	111	0.6	0.14	37	0.2	0.14
Less Urbanized	1,586	8.8	0.56	195	1.1	0.22	112	0.6	0.15	74	0.4	0.10	23	0.1	0.08
Completely Rural	252	6.8	1.17	71	1.9	0.87	9	0.2	0.09	15	0.4	0.19	2	0.1	0.06

Source: Center for Behavioral Health Statistics and Quality. 2018 National Survey on Drug Use and Health (NSDUH). Substance Abuse and Mental Health Services Administration (SAMSHA), Rockville, MD.

Abbreviation: SE, standard error.

[a] Illicit drug use includes the use of marijuana, cocaine (including crack), heroin, hallucinogens, inhalants, or methamphetamine.

[b] Misuse of prescription drugs is defined as use in any way not directed by a doctor, including use without a prescription of one's own medication; use in greater amounts, more often, or longer than told to take a drug; or use in any other way not directed by a doctor. Prescription drugs do not include over-the-counter drugs.

[c] This category includes heroin use, prescription pain reliever misuse, or both; therefore the numbers for heroin use and prescription pain reliever misuse do not add to those for opioid misuse because of poly-drug use. This category includes misuse of prescription fentanyl but does not include illicitly manufactured fentanyl.

[d] All race/ethnicity categories other than "Hispanic" are non-Hispanic. Data on two or more races are not included.

[e] County type was determined according to the "Rural-Urban Continuum Codes," a product of the U.S. Department of Agriculture: https://www.ers.usda.gov/data-products/rural-urban-continuum-codes.aspx.

[f] Percentages are rounded to the nearest tenth. Because of the rounding, some percentages equal to 0.0 are displayed. These prevalence estimates are rounded down from < 0.05 percent and do not represent an absence of persons displaying a particular characteristic.

[g] Low precision, no estimate reported.

[h] Age category was not available in SAMSHA report.

TABLE 2G   **Self-reported prevalence of illicit drug use[a] and prescription drug misuse[b] in the <u>past month</u>, persons 12+ years old, numbers in thousands — United States, 2018**

CONTINUED

Socio-demographic characteristic	Marijuana			Heroin			Opioids[c] (heroin use or prescription pain reliever misuse)			Cocaine			Methamphetamine		
	Number	%	SE	Number	%	SE	Number	%	SE	Number	%	SE	Number	%	SE
All	27,667	10.1	0.20	354	0.1	0.02	3,042	1.1	0.06	1,949	0.7	0.05	1,001	0.4	0.04
Gender															
Male	16,338	12.3	0.30	221	0.2	0.03	1,569	1.2	0.09	1,320	1.0	0.08	641	0.5	0.06
Female	11,328	8.0	0.21	134	0.1	0.02	1,473	1.0	0.07	630	0.4	0.05	360	0.3	0.04
Age (years)															
12–17	1,658	6.7	0.25	8	0.0	0.02	169	0.7	0.09	12	0.0[f]	0.02	17	0.1	0.02
18–25	7,528	22.1	0.47	61	0.2	0.04	508	1.5	0.11	524	1.5	0.13	90	0.3	0.04
≥ 26	18,481	8.6	0.22	285	0.1	0.02	2,366	1.1	0.07	1,414	0.7	0.05	894	0.4	0.05
26-34	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h
≥ 35	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h
35–39	2,651	12.1	0.58	66	0.3	0.10	366	1.7	0.22	192	0.9	0.19	118	0.5	0.12
40–44	2,050	10.5	0.61	24	0.1	0.05	275	1.4	0.21	129	0.7	0.15	68	0.3	0.09
45–49	1,514	7.8	0.49	24	0.1	0.06	261	1.3	0.21	126	0.6	0.15	101	0.5	0.13
50–54	1,447	7.0	0.71	2	0.0	0.01	188	0.9	0.26	64	0.3	0.13	106	0.5	0.18
55–59	1,449	6.7	0.71	11	0.1	0.04	229	1.1	0.28	93	0.4	0.16	71	0.3	0.13
60–64	1,384	6.8	0.75	29	0.1	0.12	152	0.7	0.25	173	0.8	0.28	82	0.4	0.22
≥ 65	1,284	2.5	0.35	7	0.0	0.01	198	0.4	0.12	8	0.0[f]	0.01	59	0.1	0.07
Race/ethnicity[d]															
White	17,608	10.3	0.23	240	0.1	0.02	2,091	1.2	0.08	1,129	0.7	0.05	730	0.4	0.05
Black	4,028	12.2	0.54	58	0.2	0.09	366	1.1	0.17	338	1.0	0.17	25	0.1	0.04
Hispanic	3,986	8.5	0.39	35	0.1	0.03	422	0.9	0.12	316	0.7	0.11	174	0.4	0.11
American Indian or Alaska Native	243	14.6	2.41	4	0.2	0.16	24	1.4	0.45	8	0.5	0.32	23	1.4	0.56

Source: Center for Behavioral Health Statistics and Quality. 2018 National Survey on Drug Use and Health (NSDUH). Substance Abuse and Mental Health Services Administration (SAMSHA), Rockville, MD.

Abbreviation: SE, standard error.

[a]Illicit drug use includes the use of marijuana, cocaine (including crack), heroin, hallucinogens, inhalants, or methamphetamine.

[b]Misuse of prescription drugs is defined as use in any way not directed by a doctor, including use without a prescription of one's own medication; use in greater amounts, more often, or longer than told to take a drug; or use in any other way not directed by a doctor. Prescription drugs do not include over-the-counter drugs.

[c]This category includes heroin use, prescription pain reliever misuse, or both; therefore the numbers for heroin use and prescription pain reliever misuse do not add to those for opioid misuse because of poly-drug use. This category includes misuse of prescription fentanyl but does not include illicitly manufactured fentanyl.

[d]All race/ethnicity categories other than "Hispanic" are non-Hispanic. Data on two or more races are not included.

[e]County type was determined according to the "Rural-Urban Continuum Codes," a product of the U.S. Department of Agriculture: https://www.ers.usda.gov/data-products/rural-urban-continuum-codes.aspx.

[f]Percentages are rounded to the nearest tenth. Because of the rounding, some percentages equal to 0.0 are displayed. These prevalence estimates are rounded down from < 0.05 percent and do not represent an absence of persons displaying a particular characteristic.

[g]Low precision, no estimate reported.

[h]Age category was not available in SAMSHA report.

TABLE 2G

Self-reported prevalence of illicit drug use[a] and prescription drug misuse[b] in the past month, persons 12+ years old, numbers in thousands — United States, 2018

CONTINUED

Socio-demographic characteristic	Marijuana			Heroin			Opioids[c] (heroin use or prescription pain reliever misuse)			Cocaine			Methamphetamine		
	Number	%	SE	Number	%	SE	Number	%	SE	Number	%	SE	Number	%	SE
Native Hawaiian or other Pacific Islander	80	7.7	1.92	g	g	g	12	1.1	0.73	6	0.6	0.33	g	g	g
Asian	870	5.6	0.77	4	0.0	0.02	53	0.3	0.10	81	0.5	0.19	10	0.1	0.05
U.S. census region of residence															
Northeast	4,990	10.4	0.43	134	0.3	0.07	472	1.0	0.12	436	0.9	0.14	94	0.2	0.06
Midwest	5,464	9.6	0.37	76	0.1	0.04	571	1.0	0.13	315	0.6	0.09	244	0.4	0.09
South	8,405	8.1	0.25	96	0.1	0.02	1,386	1.3	0.11	579	0.6	0.06	280	0.3	0.04
West	8,808	13.5	0.55	48	0.1	0.02	613	0.9	0.11	620	1.0	0.12	383	0.6	0.10
County type[e]															
Large metropolitan	16,223	10.6	0.28	184	0.1	0.03	1,615	1.1	0.08	1,309	0.9	0.07	461	0.3	0.05
Small metropolitan	8,307	10.2	0.32	122	0.1	0.03	949	1.2	0.10	503	0.6	0.07	339	0.4	0.07
Non-metropolitan	3,137	7.9	0.38	48	0.1	0.04	479	1.2	0.15	137	0.3	0.07	201	0.5	0.08
Urbanized	1,623	9.2	0.66	27	0.2	0.07	199	1.1	0.18	83	0.5	0.14	91	0.5	0.11
Less Urbanized	1,343	7.4	0.51	20	0.1	0.04	208	1.2	0.22	51	0.3	0.08	89	0.5	0.13
Completely Rural	171	4.6	0.78	2	0.0	0.03	72	1.9	0.87	3	0.1	0.04	20	0.5	0.31

Source: Center for Behavioral Health Statistics and Quality. 2018 National Survey on Drug Use and Health (NSDUH). Substance Abuse and Mental Health Services Administration (SAMSHA), Rockville, MD.

Abbreviation: SE, standard error.

[a]Illicit drug use includes the use of marijuana, cocaine (including crack), heroin, hallucinogens, inhalants, or methamphetamine.

[b]Misuse of prescription drugs is defined as use in any way not directed by a doctor, including use without a prescription of one's own medication; use in greater amounts, more often, or longer than told to take a drug; or use in any other way not directed by a doctor. Prescription drugs do not include over-the-counter drugs.

[c]This category includes heroin use, prescription pain reliever misuse, or both; therefore the numbers for heroin use and prescription pain reliever misuse do not add to those for opioid misuse because of poly-drug use. This category includes misuse of prescription fentanyl but does not include illicitly manufactured fentanyl.

[d]All race/ethnicity categories other than "Hispanic" are non-Hispanic. Data on two or more races are not included.

[e]County type was determined according to the "Rural-Urban Continuum Codes," a product of the U.S. Department of Agriculture: https://www.ers.usda.gov/data-products/rural-urban-continuum-codes.aspx.

[f]Percentages are rounded to the nearest tenth. Because of the rounding, some percentages equal to 0.0 are displayed. These prevalence estimates are rounded down from < 0.05 percent and do not represent an absence of persons displaying a particular characteristic.

[g]Low precision, no estimate reported.

[h]Age category was not available in SAMSHA report.

TABLE 2H

Self-reported prevalence of illicit drug use[a] and prescription drug misuse[b] in the past year, persons 12+ years old, numbers in thousands — United States, 2018

Socio-demographic characteristic	All illicit drug use and prescription drug misuse			Prescription pain relievers			Prescription tranquilizers			Prescription stimulants			Prescription sedatives			Prescription benzodiazepines		
	Number	%	SE	Number	%	SE	Number	%	SE	Number	%	SE	Number	%	SE	Number	%	SE
All	53,182	19.4	0.26	9,948	3.6	0.10	5,742	2.1	0.08	5,109	1.9	0.06	1,084	0.4	0.04	5,438	2.0	0.08
Gender																		
Male	29,248	22.0	0.38	5,154	3.9	0.16	2,865	2.2	0.13	2,812	2.1	0.10	605	0.5	0.06	2,759	2.1	0.12
Female	23,933	17.0	0.30	4,794	3.4	0.14	2,877	2.0	0.10	2,296	1.6	0.08	479	0.3	0.04	2,679	1.9	0.10
Age (years)																		
12–17	4,151	16.7	0.37	695	2.8	0.17	423	1.7	0.13	369	1.5	0.11	63	0.3	0.05	399	1.6	0.13
18–25	13,168	38.7	0.54	1,858	5.5	0.21	1,566	4.6	0.21	2,216	6.5	0.27	194	0.6	0.07	1,526	4.5	0.21
≥ 26	35,863	16.7	0.30	7,395	3.4	0.13	3,753	1.7	0.10	2,524	1.2	0.06	827	0.4	0.04	3,513	1.6	0.09
35–39	4,924	22.5	0.76	1,091	5.0	0.38	569	2.6	0.27	458	2.1	0.26	140	0.6	0.15	542	2.5	0.27
40–44	3,778	19.3	0.77	773	3.9	0.37	306	1.6	0.22	206	1.1	0.18	73	0.4	0.12	289	1.5	0.22
45–49	3,026	15.6	0.67	700	3.6	0.34	316	1.6	0.23	161	0.8	0.17	60	0.3	0.09	286	1.5	0.22
50–54	3,076	14.9	1.00	700	3.4	0.52	334	1.6	0.39	60	0.3	0.14	59	0.3	0.13	329	1.6	0.39
55–59	3,301	15.2	1.03	763	3.5	0.52	399	1.8	0.46	33	0.2	0.07	100	0.5	0.17	333	1.5	0.43
60–64	2,648	13.0	0.98	487	2.4	0.45	174	0.9	0.25	33	0.2	0.11	62	0.3	0.17	174	0.9	0.25
≥ 65	2,897	5.7	0.47	681	1.3	0.22	234	0.5	0.14	34	0.1	0.04	79	0.2	0.06	210	0.4	0.14
Race/ethnicity[d]																		
White	34,530	20.2	0.32	6,583	3.9	0.14	4,159	2.4	0.11	3,766	2.2	0.09	811	0.5	0.05	3,960	2.3	0.10
Black	6,868	20.8	0.68	1,103	3.3	0.28	344	1.0	0.12	293	0.9	0.11	33	0.1	0.04	324	1.0	0.12

Source: Center for Behavioral Health Statistics and Quality. 2018 National Survey on Drug Use and Health (NSDUH). Substance Abuse and Mental Health Services Administration (SAMSHA), Rockville, MD.

Abbreviation: SE, standard error.

[a] Illicit drug use includes the use of marijuana, cocaine (including crack), heroin, hallucinogens, inhalants, or methamphetamine.

[b] Misuse of prescription drugs is defined as use in any way not directed by a doctor, including use without a prescription of one's own medication; use in greater amounts, more often, or longer than told to take a drug; or use in any other way not directed by a doctor. Prescription drugs do not include over-the-counter drugs.

[c] This category includes heroin use, prescription pain reliever misuse, or both; therefore the numbers for heroin use and prescription pain reliever misuse do not add to those for opioid misuse because of poly-drug use. This category includes misuse of prescription fentanyl but does not include illicitly manufactured fentanyl.

[d] All race/ethnicity categories other than "Hispanic" are non-Hispanic. Data on two or more races are not included.

[e] County type was determined according to the "Rural-Urban Continuum Codes," a product of the U.S. Department of Agriculture: https://www.ers.usda.gov/data-products/rural-urban-continuum-codes.aspx.

[f] Percentages are rounded to the nearest tenth. Because of the rounding, some percentages equal to 0.0 are displayed. These prevalence estimates are rounded down from < 0.05 percent and do not represent an absence of persons displaying a particular characteristic.

[g] Low precision, no estimate reported.

CONTINUED

TABLE 2H **Self-reported prevalence of illicit drug use[a] and prescription drug misuse[b] in the past year, persons 12+ years old, numbers in thousands — United States, 2018**

Socio-demographic characteristic	All illicit drug use and prescription drug misuse			Prescription pain relievers			Prescription tranquilizers			Prescription stimulants			Prescription sedatives			Prescription benzodiazepines		
	Number	%	SE	Number	%	SE	Number	%	SE	Number	%	SE	Number	%	SE	Number	%	SE
Hispanic	7,996	17.1	0.53	1,644	3.5	0.26	944	2.0	0.25	630	1.4	0.12	167	0.4	0.10	881	1.9	0.24
American Indian or Alaska Native	474	28.5	2.86	96	5.8	1.10	40	2.4	0.79	24	1.4	0.45	15	0.9	0.54	25	1.5	0.53
Native Hawaiian or other Pacific Islander	220	21.2	3.51	87	8.4	2.47	22	2.1	1.13	14	1.4	0.95	2	0.2	0.23	22	2.1	1.13
Asian	1,752	11.2	0.93	216	1.4	0.23	106	0.7	0.16	243	1.6	0.29	16	0.1	0.05	102	0.7	0.16
U.S. census region of residence																		
Northeast	9,598	20.1	0.59	1,367	2.9	0.20	982	2.1	0.22	1,034	2.2	0.16	199	0.4	0.07	944	2.0	0.22
Midwest	10,853	19.0	0.49	2,026	3.5	0.21	1,246	2.2	0.16	1,192	2.1	0.16	217	0.4	0.06	1,170	2.0	0.15
South	17,321	16.7	0.37	4,039	3.9	0.18	2,139	2.1	0.13	1,671	1.6	0.10	334	0.3	0.05	2,019	1.9	0.12
West	15,410	23.7	0.68	2,516	3.9	0.25	1,375	2.1	0.20	1,212	1.9	0.14	334	0.5	0.10	1,305	2.0	0.19
County type[e]																		
Large metropolitan	30,826	20.2	0.38	5,234	3.4	0.15	3,457	2.3	0.13	2,937	1.9	0.09	633	0.4	0.05	3,289	2.2	0.13
Small metropolitan	16,149	19.8	0.44	3,255	4.0	0.18	1,627	2.0	0.12	1,653	2.0	0.11	265	0.3	0.05	1,511	1.8	0.11
Non-metropolitan	6,207	15.7	0.52	1,459	3.7	0.23	658	1.7	0.14	519	1.3	0.12	185	0.5	0.11	638	1.6	0.14
Urbanized	3,020	17.1	0.85	688	3.9	0.35	325	1.8	0.21	267	1.5	0.19	101	0.6	0.19	316	1.8	0.21
Less Urbanized	2,721	15.0	0.72	635	3.5	0.34	302	1.7	0.22	218	1.2	0.17	65	0.4	0.15	291	1.6	0.22
Completely Rural	466	12.5	1.47	136	3.7	0.91	31	0.8	0.20	33	0.9	0.25	20	0.5	0.41	31	0.8	0.20

Source: Center for Behavioral Health Statistics and Quality. 2018 National Survey on Drug Use and Health (NSDUH). Substance Abuse and Mental Health Services Administration (SAMSHA), Rockville, MD.

Abbreviation: SE, standard error.

[a] Illicit drug use includes the use of marijuana, cocaine (including crack), heroin, hallucinogens, inhalants, or methamphetamine.

[b] Misuse of prescription drugs is defined as use in any way not directed by a doctor, including use without a prescription of one's own medication; use in greater amounts, more often, or longer than told to take a drug; or use in any other way not directed by a doctor. Prescription drugs do not include over-the-counter drugs.

[c] This category includes heroin use, prescription pain reliever misuse, or both; therefore the numbers for heroin use and prescription pain reliever misuse do not add to those for opioid misuse because of poly-drug use. This category includes misuse of prescription fentanyl but does not include illicitly manufactured fentanyl.

[d] All race/ethnicity categories other than "Hispanic" are non-Hispanic. Data on two or more races are not included.

[e] County type was determined according to the "Rural-Urban Continuum Codes," a product of the U.S. Department of Agriculture: https://www.ers.usda.gov/data-products/rural-urban-continuum-codes.aspx.

[f] Percentages are rounded to the nearest tenth. Because of the rounding, some percentages equal to 0.0 are displayed. These prevalence estimates are rounded down from < 0.05 percent and do not represent an absence of persons displaying a particular characteristic.

[g] Low precision, no estimate reported.

CONTINUED

TABLE 2H

Self-reported prevalence of illicit drug use[a] and prescription drug misuse[b] in the past year, persons 12+ years old, numbers in thousands — United States, 2018

Socio-demographic characteristic	Marijuana			Heroin			Opioids[c] (heroin use or prescription pain reliever misuse)			Cocaine			Methamphetamine		
	Number	%	SE	Number	%	SE	Number	%	SE	Number	%	SE	Number	%	SE
All	43,486	15.9	0.24	808	0.3	0.04	10,250	3.7	0.11	5,529	2.0	0.07	1,867	0.7	0.04
Gender															
Male	24,542	18.5	0.36	516	0.4	0.06	5,351	4.0	0.16	3,482	2.6	0.12	1,108	0.8	0.07
Female	18,944	13.4	0.27	292	0.2	0.03	4,899	3.5	0.14	2,047	1.5	0.08	758	0.5	0.05
Age (years)															
12–17	3,110	12.5	0.33	10	0.0[f]	0.02	699	2.8	0.17	112	0.4	0.07	43	0.2	0.04
18–25	11,829	34.8	0.53	157	0.5	0.07	1,895	5.6	0.21	1,967	5.8	0.26	273	0.8	0.09
≥ 26	28,548	13.3	0.28	641	0.3	0.04	7,656	3.6	0.13	3,451	1.6	0.08	1,551	0.7	0.05
35–39	4,027	18.4	0.71	119	0.5	0.14	1,123	5.1	0.38	482	2.2	0.28	250	1.1	0.18
40–44	3,052	15.6	0.71	60	0.3	0.08	788	4.0	0.37	268	1.4	0.22	162	0.8	0.15
45–49	2,245	11.6	0.59	31	0.2	0.06	708	3.6	0.34	254	1.3	0.21	157	0.8	0.16
50–54	2,285	11.1	0.84	88	0.4	0.26	751	3.6	0.55	190	0.9	0.28	110	0.5	0.18
55–59	2,348	10.8	0.86	46	0.2	0.11	809	3.7	0.54	156	0.7	0.20	107	0.5	0.17
60–64	2,153	10.6	0.92	39	0.2	0.13	496	2.4	0.46	252	1.2	0.31	126	0.6	0.25
≥ 65	2,103	4.1	0.43	7	0.0[f]	0.01	688	1.3	0.22	30	0.1	0.03	59	0.1	0.07
Race/ethnicity[d]															
White	28,146	16.5	0.29	531	0.3	0.03	6,747	4.0	0.14	3,630	2.1	0.09	1,346	0.8	0.06

Source: Center for Behavioral Health Statistics and Quality, 2018 National Survey on Drug Use and Health (NSDUH). Substance Abuse and Mental Health Services Administration (SAMSHA), Rockville, MD.

Abbreviation: SE, standard error.

[a] Illicit drug use includes the use of marijuana, cocaine (including crack), heroin, hallucinogens, inhalants, or methamphetamine.

[b] Misuse of prescription drugs is defined as use in any way not directed by a doctor, including use without a prescription of one's own medication; use in greater amounts, more often, or longer than told to take a drug; or use in any other way not directed by a doctor. Prescription drugs do not include over-the-counter drugs.

[c] This category includes heroin use, prescription pain reliever misuse, or both; therefore the numbers for heroin use and prescription pain reliever misuse do not add to those for opioid misuse because

of poly-drug use. This category includes misuse of prescription fentanyl but does not include illicitly manufactured fentanyl.

[d] All race/ethnicity categories other than "Hispanic" are non-Hispanic. Data on two or more races are not included.

[e] County type was determined according to the "Rural-Urban Continuum Codes," a product of the U.S. Department of Agriculture: https://www.ers.usda.gov/data-products/rural-urban-continuum-codes.aspx.

[f] Percentages are rounded to the nearest tenth. Because of the rounding, some percentages equal to 0.0 are displayed. These prevalence estimates are rounded down from < 0.05 percent and do not represent an absence of persons displaying a particular characteristic.

[g] Low precision; no estimate reported.

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TABLE 2H

Self-reported prevalence of illicit drug use[a] and prescription drug misuse[b] in the past year, persons 12+ years old, numbers in thousands — United States, 2018

Socio-demographic characteristic	Marijuana			Heroin			Opioids[c] (heroin use or prescription pain reliever misuse)			Cocaine			Methamphetamine		
	Number	%	SE	Number	%	SE	Number	%	SE	Number	%	SE	Number	%	SE
Black	5,859	17.8	0.64	135	0.4	0.2	1,203	3.7	0.33	577	1.8	0.27	64	0.2	0.06
Hispanic	6,319	13.6	0.48	107	0.2	0.09	1,673	3.6	0.26	891	1.9	0.17	319	0.7	0.12
American Indian or Alaska Native	384	23.0	2.89	5	0.3	0.16	97	5.8	1.10	31	1.9	0.60	39	2.4	0.69
Native Hawaiian or other Pacific Islander	184	17.7	3.22	g	g	g	87	8.4	2.47	17	1.6	0.77	19	1.8	1.12
Asian	1,395	8.9	0.87	7	0.0f	0.03	219	1.4	0.23	226	1.4	0.30	27	0.2	0.08
U.S. census region of residence															
Northeast	8,067	16.9	0.56	244	0.5	0.15	1,462	3.1	0.23	1,167	2.4	0.23	150	0.3	0.07
Midwest	8,802	15.4	0.44	153	0.3	0.06	2,097	3.7	0.21	994	1.7	0.15	416	0.7	0.10
South	13,494	13.0	0.34	238	0.2	0.04	4,108	4.0	0.18	1,613	1.6	0.10	569	0.5	0.06
West	13,123	20.2	0.64	172	0.3	0.07	2,584	4.0	0.25	1,755	2.7	0.19	732	1.1	0.13
County type[e]															
Large metropolitan	25,560	16.8	0.35	454	0.3	0.06	5,411	3.5	0.16	3,435	2.3	0.11	855	0.6	0.06
Small metropolitan	13,043	16.0	0.41	251	0.3	0.05	3,340	4.1	0.19	1,589	1.9	0.12	652	0.8	0.09
Non-metropolitan	4,883	12.4	0.47	103	0.3	0.05	1,499	3.8	0.23	505	1.3	0.14	359	0.9	0.10
Urbanized	2,434	13.8	0.79	50	0.3	0.09	702	4.0	0.35	287	1.6	0.27	155	0.9	0.14
Less Urbanized	2,095	11.6	0.60	51	0.3	0.07	660	3.6	0.34	193	1.1	0.16	179	1.0	0.17
Completely Rural	355	9.5	1.21	2	0.0f	0.03	137	3.7	0.91	25	0.7	0.25	26	0.7	0.33

Source: Center for Behavioral Health Statistics and Quality. 2018 National Survey on Drug Use and Health (NSDUH). Substance Abuse and Mental Health Services Administration (SAMSHA), Rockville, MD.

Abbreviation: SE, standard error.

[a]Illicit drug use includes the use of marijuana, cocaine (including crack), heroin, hallucinogens, inhalants, or methamphetamine.

[b]Misuse of prescription drugs is defined as use in any way not directed by a doctor, including use without a prescription of one's own medication; use in greater amounts, more often, or longer than told to take a drug; or use in any other way not directed by a doctor. Prescription drugs do not include over-the-counter drugs.

[c]This category includes heroin use, prescription pain reliever misuse, or both; therefore the numbers for heroin use and prescription pain reliever misuse do not add to those for opioid misuse because of poly-drug use. This category includes misuse of prescription fentanyl but does not include illicitly manufactured fentanyl.

[d]All race/ethnicity categories other than "Hispanic" are non-Hispanic. Data on two or more races are not included.

[e]County type was determined according to the "Rural-Urban Continuum Codes," a product of the U.S. Department of Agriculture: https://www.ers.usda.gov/data-products/rural-urban-continuum-codes.aspx.

[f]Percentages are rounded to the nearest tenth. Because of the rounding, some percentages equal to 0.0 are displayed. These prevalence estimates are rounded down from < 0.05 percent and do not represent an absence of persons displaying a particular characteristic.

[g]Low precision, no estimate reported.

TABLE 21

Self-reported prevalence of <u>any prescription drug use</u> (including misuse[a]) in the <u>past year</u>, persons 12+ years old, by drug type, numbers in thousands — United States, 2018

Socio-demographic characteristic	Prescription pain relievers			Prescription tranquilizers			Prescription stimulants			Prescription sedatives			Benzodiazepines		
	Number	%	SE	Number	%	SE	Number	%	SE	Number	%	SE	Number	%	SE
All	86,548	31.6	0.29	37,610	13.7	0.22	18,008	6.6	0.14	16,775	6.1	0.16	30,755	11.2	0.21
Gender															
Male	39,229	29.5	0.41	14,139	10.6	0.30	8,568	6.5	0.20	6,655	5.0	0.21	11,659	8.8	0.28
Female	47,319	33.6	0.41	23,471	16.7	0.32	9,441	6.7	0.18	10,120	7.2	0.24	19,097	13.5	0.30
Age (years)															
12–17	4,141	16.6	0.36	1,001	4.0	0.19	1,752	7.0	0.25	502	2.0	0.13	769	3.1	0.16
18–25	8,931	26.2	0.44	3,681	10.8	0.30	4,473	13.1	0.37	1,049	3.1	0.17	3,230	9.5	0.29
≥ 26	73,476	34.2	0.36	32,928	15.3	0.27	11,783	5.5	0.15	15,225	7.1	0.20	26,757	12.5	0.26
Race/ethnicity[b]															
White	57,151	33.5	0.36	28,413	16.6	0.28	13,258	7.8	0.19	12,657	7.4	0.21	23,870	14.0	0.28
Black	11,076	33.6	0.84	2,792	8.5	0.48	1,371	4.2	0.30	1,512	4.6	0.45	2,120	6.4	0.44
Hispanic	12,301	26.4	0.65	4,591	9.8	0.52	2,299	4.9	0.29	1,472	3.2	0.30	3,408	7.3	0.47
American Indian or Alaska Native	606	36.4	3.19	172	10.3	1.74	88	5.3	1.04	121	7.3	1.79	126	7.6	1.47
Native Hawaiian or other Pacific Islander	397	38.1	4.67	d	d	d	37	3.5	1.89	48	4.6	2.05	d	d	d
Asian	3,051	19.5	1.20	867	5.5	0.92	511	3.3	0.44	567	3.6	0.78	670	4.3	0.86
U.S. census region of residence															
Northeast	13,356	27.9	0.69	6,593	13.8	0.53	3,103	6.5	0.35	2,356	4.9	0.31	5,488	11.5	0.50
Midwest	17,927	31.3	0.57	7,794	13.6	0.45	4,151	7.3	0.31	3,133	5.5	0.29	6,269	11.0	0.41
South	34,960	33.7	0.48	14,631	14.1	0.37	7,045	6.8	0.23	6,950	6.7	0.28	11,952	11.5	0.34
West	20,305	31.2	0.64	8,593	13.2	0.52	3,709	5.7	0.23	4,337	6.7	0.43	7,046	10.8	0.52
County type[c]															
Large metropolitan	45,508	29.8	0.42	20,076	13.2	0.32	9,846	6.5	0.19	9,115	6.0	0.24	16,678	10.9	0.31
Small metropolitan	27,526	33.7	0.47	12,083	14.8	0.38	5,983	7.3	0.25	5,291	6.5	0.28	9,741	11.9	0.34
Non-metropolitan	13,513	34.2	0.74	5,452	13.8	0.56	2,179	5.5	0.29	2,369	6.0	0.39	4,336	11.0	0.54
Urbanized	6,107	34.6	1.12	2,556	14.5	0.81	1,100	6.2	0.46	1,105	6.3	0.64	2,013	11.4	0.69
Less Urbanized	6,227	34.4	1.07	2,322	12.8	0.71	914	5.1	0.38	1,085	6.0	0.58	1,857	10.3	0.70
Completely Rural	1,179	31.7	2.41	574	15.4	2.49	164	4.4	1.02	179	4.8	0.90	466	12.5	2.47

Source: Center for Behavioral Health Statistics and Quality. 2018 National Survey on Drug Use and Health (NSDUH). Substance Abuse and Mental Health Services Administration (SAMSHA), Rockville, MD.

Abbreviation: SE, standard error.

[a]Misuse of prescription drugs is defined as use in any way not directed by a doctor, including use without a prescription of one's own medication; use in greater amounts, more often, or longer than told to take a drug; or use in any other way not directed by a doctor. Prescription drugs do not include over-the-counter drugs.

[b]All race/ethnicity categories other than "Hispanic" are non-Hispanic. Data on two or more races are not included.

[c]County type was determined according to the "Rural-Urban Continuum Codes", a product of the U.S. Department of Agriculture: https://www.ers.usda.gov/data-products/rural-urban-continuum-codes.aspx.

[d]Low precision, no estimate reported.

TABLE 2J

Self-reported prevalence of past year initiation of illicit drug use and prescription drug misuse[a], persons 12+ years old, by drug type, numbers in thousands — United States, 2018

Socio-demographic characteristic	Prescription pain relievers			Prescription tranquilizers			Prescription stimulants			Prescription sedatives			Marijuana			Heroin			Cocaine			Methamphetamine		
	No.	%	SE	No.	%	SE	No.	%	SE	No.	%	SE	No.	%	SE	No.	%	SE	No.	%	SE	No.	%	SE
All	1,908	0.7	0.04	1,210	0.4	0.03	1,001	0.4	0.02	251	0.1	0.01	3,061	1.1	0.04	117	0.0[b]	0.01	874	0.3	0.02	205	0.1	0.01
Age (years)																								
12–17	310	1.2	0.11	215	0.9	0.09	181	0.7	0.08	36	0.1	0.04	1,339	5.4	0.22	7	0.0[b]	0.02	74	0.3	0.06	31	0.1	0.03
18–25	464	1.4	0.11	434	1.3	0.11	517	1.5	0.12	73	0.2	0.05	1,197	3.5	0.19	35	0.1	0.03	616	1.8	0.15	68	0.2	0.04
≥ 26	1,134	0.5	0.05	560	0.3	0.04	302	0.1	0.2	143	0.1	0.02	525	0.2	0.03	75	0.0[b]	0.01	184	0.1	0.02	106	0.0[b]	0.01

Source: Center for Behavioral Health Statistics and Quality. 2018 National Survey on Drug Use and Health (NSDUH). Substance Abuse and Mental Health Services Administration (SAMSHA), Rockville, MD.

Abbreviations: No., number; SE, standard error.

[a]Misuse of prescription drugs is defined as use in any way not directed by a doctor, including use without a prescription of one's own medication; use in greater amounts, more often, or longer than told to take a drug; or use in any other way not directed by a doctor. Prescription drugs do not include over-the-counter drugs.

[b]Percentages are rounded to the nearest tenth. Because of the rounding, some percentages equal to 0.0 are displayed. These prevalence estimates are rounded down from < 0.05 percent and do not represent an absence of persons displaying a particular characteristic.

| TABLE 2K | **Self-reported prevalence of substance use disorder[a] for specific substances in the past year, persons 12+ years old, numbers in thousands — United States, 2018** |

Socio-demographic characteristic	All illicit drugs[b]			Prescription pain relievers			Prescription tranquilizers			Prescription stimulants			Prescription sedatives		
	Number	%	SE	Number	%	SE	Number	%	SE	Number	%	SE	Number	%	SE
All	8,094	3.0	0.10	1,694	0.6	0.05	673	0.2	0.02	561	0.2	0.02	113	0.0[e]	0.01
Age (years)															
12–17	681	2.7	0.16	104	0.4	0.07	61	0.2	0.05	53	0.2	0.04	12	0.0[e]	0.02
18–25	2,599	7.6	0.27	248	0.7	0.08	223	0.7	0.07	185	0.5	0.08	9	0.0[e]	0.01
≥ 26	4,814	2.2	0.11	1,343	0.6	0.06	390	0.2	0.03	323	0.2	0.02	91	0.0[e]	0.01

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Socio-demographic characteristic	Marijuana			Heroin			Opioids[c] (heroin use or prescription pain reliever misuse)			Cocaine[d]			Methamphetamine		
	Number	%	SE	Number	%	SE	Number	%	SE	Number	%	SE	Number	%	SE
All	4,421	1.6	0.06	526	0.2	0.03	2,028	0.7	0.06	977	0.4	0.03	1,051	0.4	0.03
Age (in years)															
12–17	512	2.1	0.14	4	0.0[e]	0.01	108	0.4	0.07	5	0.0[e]	0.01	18	0.1	0.02
18–25	2,003	5.9	0.25	101	0.3	0.06	312	0.9	0.09	212	0.6	0.08	134	0.4	0.06
≥ 26	1,907	0.9	0.06	421	0.2	0.04	1,608	0.7	0.07	760	0.4	0.04	899	0.4	0.04

Source: Center for Behavioral Health Statistics and Quality. 2018 National Survey on Drug Use and Health (NSDUH). Substance Abuse and Mental Health Services Administration (SAMSHA), Rockville, MD.

Abbreviation: SE, standard error.

[a]Substance use disorder is defined as meeting criteria for illicit drug dependence or abuse. Dependence or abuse is based on definitions found in the 4th edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV).

[b]Illicit drug use includes the misuse of prescription psychotherapeutics or the use of marijuana, cocaine (including crack), heroin, hallucinogens, inhalants, or methamphetamine.

[c]This category includes prescription fentanyl but does not include illicitly manufactured fentanyl.

[d]Including crack.

[e]Percentages are rounded to the nearest tenth. Because of the rounding, some percentages equal to 0.0 are displayed. These prevalence estimates are rounded down from < 0.05 percent and do not represent an absence of persons displaying a particular characteristic.

| TABLE 2L | **Prevalence of self-reported treatment[a] for illicit drug use and prescription drug misuse in the <u>past year</u>, persons 12+ years old, by demographic characteristics, numbers in thousands — United States, 2018** |

Socio-demographic characteristic	Any location			Specialty facility[b]		
	Number	%	SE	Number	%	SE
All	2,097	0.8	0.04	1,392	0.5	0.04
Gender						
Male	1,214	0.9	0.07	793	0.6	0.06
Female	884	0.6	0.05	599	0.4	0.04
Age (years)						
12–17	130	0.5	0.08	80	0.3	0.06
18–25	311	0.9	0.09	201	0.6	0.07
≥ 26	1,656	0.8	0.05	1,111	0.5	0.04
Race/ethnicity[c]						
White	1,543	0.9	0.06	1,067	0.6	0.05
Black	240	0.7	0.12	138	0.4	0.09
Hispanic	234	0.5	0.08	144	0.3	0.06
American Indian or Alaska Native	17	1.0	0.35	2	0.1	0.08
Native Hawaiian or other Pacific Islander	5	0.5	0.28	2	0.2	0.12
Asian	24	0.2	0.10	23	0.1	0.10
U.S. census region of residence						
Northeast	442	0.9	0.10	304	0.6	0.08
Midwest	373	0.7	0.08	252	0.4	0.07
South	799	0.8	0.08	514	0.5	0.06
West	483	0.7	0.10	322	0.5	0.08
County type[d]						
Large metropolitan	1,020	0.7	0.06	713	0.5	0.05
Small metropolitan	750	0.9	0.09	464	0.6	0.07
Non-metropolitan	328	0.8	0.13	215	0.5	0.09
Urbanized	129	0.7	0.16	111	0.6	0.16
Less Urbanized	180	1.0	0.21	93	0.5	0.11
Completely Rural	19	0.5	0.25	11	0.3	0.21

Source: Center for Behavioral Health Statistics and Quality. 2018 National Survey on Drug Use and Health (NSDUH). Substance Abuse and Mental Health Services Administration (SAMSHA), Rockville, MD.

Abbreviation: SE, standard error.

[a]Illicit or prescription drug treatment refers to treatment received in order to reduce or stop illicit drug use or prescription drug misuse, or for medical problems associated with illicit drug use or prescription drug use. It includes treatment received at any location, such as a hospital (inpatient), rehabilitation facility (inpatient or outpatient), mental health center, emergency room, private doctor's office, self-help group, or prison/jail. Illicit drug use includes the use of marijuana, cocaine (including crack), heroin, hallucinogens, inhalants, or methamphetamine. Prescription drug misuse includes the misuse of prescription pain relievers, tranquilizers, stimulants, and sedatives.

[b]A specialty facility includes a hospital (inpatient only), rehabilitation facility (inpatient or outpatient), or mental health center.

[c]All race/ethnicity categories other than "Hispanic" are non-Hispanic. Data on two or more races are not included.

[d]County type was determined according to the "Rural-Urban Continuum Codes," a product of the U.S. Department of Agriculture: https://www.ers.usda.gov/data-products/rural-urban-continuum-codes.aspx.

TABLE 3A Estimated numbers[a,b] and age-adjusted rates per 100,000 population of drug poisoning-related hospitalizations by selected substances, all intents[c] — United States, 2016

Socio-demographic characteristics	All drug poisonings[d] No.	Rate[k]	SE	All opioid poisonings[e] No.	Rate[k]	SE	Heroin poisonings[f] No.	Rate[k]	SE	Methadone poisonings[g] No.	Rate[k]	SE	Poisonings by other opioids[h] No.	Rate[k]	SE	Cocaine poisonings[i] No.	Rate[k]	SE	Methamphetamine poisonings[j] No.	Rate[k]	SE
All Visits	326,200	98.1	0.67	91,840	26.6	0.26	22,360	7.0	0.14	5,675	1.6	0.05	65,110	18.4	0.19	20,090	6.1	0.15	17,725	5.7	0.12
Sex																					
Male	145,750	89.3	0.75	44,420	26.7	0.34	15,525	9.7	0.21	2,935	1.7	0.08	26,890	15.8	0.24	13,425	8.2	0.23	11,285	7.2	0.19
Female	180,450	106.8	0.85	47,420	26.3	0.32	6,835	4.3	0.13	2,740	1.6	0.07	38,220	20.7	0.27	6,665	4.1	0.14	6,440	4.1	0.13
Age Groups																					
0–14	9,380	15.4	0.87	640	1.0	0.11	—	—	—	—	—	—	600	1.0	0.11	—	—	—	410	0.7	0.08
15–19	22,880	108.2	3.15	2,005	9.5	0.50	435	2.1	0.21	145	0.7	0.13	1,445	6.8	0.43	345	1.6	0.20	925	4.4	0.34
20–24	26,495	118.4	2.30	6,245	27.9	0.92	3,410	15.2	0.65	300	1.3	0.18	2,685	12.0	0.55	1,395	6.2	0.39	1,855	8.3	0.47
25–34	53,380	119.2	2.08	15,530	34.7	0.85	8,035	17.9	0.59	965	2.2	0.16	6,935	15.5	0.48	3,775	8.4	0.38	5,215	11.6	0.44
35–44	49,265	121.5	2.12	12,840	31.7	0.80	4,195	10.3	0.45	885	2.2	0.17	8,005	19.7	0.57	3,915	9.7	0.45	4,015	9.9	0.43
45–54	58,065	135.6	2.33	17,140	40.0	0.89	3,350	7.8	0.44	1,180	2.8	0.20	12,940	30.2	0.7	5,610	13.1	0.76	3,115	7.3	0.45
55–64	53,780	129.7	2.07	20,205	48.7	1.01	2,400	5.8	0.34	1,440	3.5	0.23	16,575	40.0	0.85	4,115	9.9	0.62	1,715	4.1	0.29
≥ 65	52,955	107.5	1.58	17,235	35.0	0.75	530	1.1	0.11	715	1.5	0.13	15,925	32.3	0.71	885	1.8	0.16	475	1.0	0.10

Abbreviations: No, number; SE, standard error.

a Weighted national estimates from HCUP Nationwide Inpatient Sample (NIS), 2016, Agency for Healthcare Research and Quality (AHRQ).

b In-hospital deaths and patients who transferred from another hospital were excluded. Visits with missing age and sex were excluded. Numbers subject to rounding error.

c Includes poisonings of accidental (unintentional) or undetermined intent and those attributable to intentional self-harm and assault.

d Includes ICD-10-CM/PCS codes T36-T50. See technical notes for additional information.

e Includes ICD-10-CM/PCS codes T40.0, T40.1, T40.2, T40.3, T40.6, T40.69.

f Includes ICD-10-CM/PCS code T40.1.

g Includes ICD-10-CM/PCS code T40.3.

h Includes ICD-10-CM/PCS codes T40.0, T40.2, T40.4, T40.6, T40.69.

i Includes ICD-10-CM/PCS code T40.5.

j Includes ICD-10-CM/PCS code T43.62.

k Rates calculated per 100,000 population. Age-adjusted to the 2000 U.S. standard population using the vintage year population of the data. Rates for age groups are crude rates.

l Because the relative standard error was > 30% or the standard error = 0, the value of the estimate was considered unreliable and was not reported.

m Rates cannot be calculated based on the available data.

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TABLE 3A   Estimated numbers[a,b] and age-adjusted rates per 100,000 population of drug poisoning-related hospitalizations by selected substances, all intents[c] — United States, 2016

Socio-demographic characteristics	All drug poisonings[d]			All opioid poisonings[e]			Heroin poisonings[f]			Methadone poisonings[g]			Poisonings by other opioids[h]			Cocaine poisonings[i]			Methamphetamine poisonings[j]		
	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE
Region																					
Northeast	57,355	97.3	1.62	16,945	28.4	0.65	6,440	11.5	0.42	1,260	2.0	0.15	9,575	15.4	0.41	5,750	9.9	0.56	1,195	2.3	0.15
Midwest	77,200	113.0	1.65	21,240	30.0	0.65	6,460	9.8	0.39	1,120	1.6	0.12	14,005	19.1	0.43	3,905	5.7	0.26	3,115	4.9	0.23
South	129,100	102.5	1.11	36,010	27.5	0.41	6,640	5.5	0.19	2,025	1.6	0.08	27,825	20.8	0.33	8,820	7.1	0.25	6,505	5.6	0.18
West	62,545	79.1	1.16	17,645	21.3	0.43	2,820	3.6	0.17	1,270	1.5	0.10	13,705	16.4	0.37	1,615	2.0	0.13	6,910	9.0	0.35
Patient Residence																					
Large central metropolitan	94,070	91.3	1.45	26,270	24.7	0.52	7,360	7.0	0.27	2,040	1.9	0.11	17,380	16.3	0.37	9,095	8.6	0.37	5,075	5.0	0.20
Large fringe metropolitan	74,645	90.2	1.41	22,665	26.8	0.56	6,710	8.7	0.31	1,120	1.3	0.09	15,140	17.1	0.39	4,265	5.3	0.23	3,065	4.0	0.19
Medium metropolitan	75,170	109.7	2.24	21,265	29.9	0.75	4,730	7.2	0.32	1,185	1.7	0.13	15,575	21.3	0.56	3,835	5.8	0.28	4,200	6.5	0.31
Small metropolitan	33,690	113.4	2.95	8,695	28.0	0.95	1,610	5.7	0.38	470	1.5	0.17	6,695	21.1	0.77	1,125	3.9	0.31	2,195	7.9	0.54
Micropolitan	28,100	102.3	1.96	7,535	25.7	0.77	1,195	4.9	0.34	385	1.3	0.16	6,000	19.7	0.65	760	3.0	0.28	1,605	6.5	0.39
Noncore	17,500	92.8	2.22	4,615	22.8	0.89	395	2.5	0.30	370	2.0	0.25	3,940	18.8	0.77	450	2.6	0.31	1,105	7.0	0.53
Unknown	3,025	m	m	795	m	m	360	m	m	105	m	m	380	m	m	560	m	m	480	m	m

Abbreviations: No., number; SE, standard error.

[a]Weighted national estimates from HCUP Nationwide Inpatient Sample (NIS), 2016, Agency for Healthcare Research and Quality (AHRQ).

[b]In-hospital deaths and patients who transferred from another hospital were excluded. Visits with missing age and sex were excluded. Numbers subject to rounding error.

[c]Includes poisonings of accidental (unintentional) or undetermined intent and those attributable to intentional self-harm and assault.

[d]Includes ICD-10-CM/PCS codes T36-T50. See technical notes for additional information.

[e]Includes ICD-10-CM/PCS codes T40.0, T40.1, T40.2, T40.3, T40.6, T40.69.

[f]Includes ICD-10-CM/PCS code T40.1.

[g]Includes ICD-10-CM/PCS code T40.3.

[h]Includes ICD-10-CM/PCS codes T40.0, T40.2, T40.4, T40.6, T40.69.

[i]Includes ICD-10-CM/PCS code T40.5.

[j]Includes ICD-10-CM/PCS code T43.62.

[k]Rates calculated per 100,000 population. Age-adjusted to the 2000 U.S. standard population using the vintage year population of the data. Rates for age groups are crude rates. Because the relative standard error was > 30% or the standard error = 0, the value of the estimate was considered unreliable and was not reported.

[m]Rates cannot be calculated based on the available data.

TABLE 3B

Estimated numbers[a,b] and age-adjusted rates per 100,000 population of drug poisoning-related hospitalizations by selected substances, unintentional and undetermined intents[c] — United States, 2016

Socio-demographic characteristics	All drug poisonings[d]			All opioid poisonings[e]			Heroin poisonings[f]			Methadone poisonings[g]			Poisonings by other opioids[h]			Cocaine poisonings[i]			Methamphetamine poisonings[j]		
	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE
All Visits	193,150	56.2	0.43	73,650	21.1	0.22	19,325	6.0	0.12	4,810	1.4	0.05	50,515	14.0	0.16	17,620	5.3	0.14	14,005	4.4	0.11
Sex																					
Male	97,320	58.9	0.57	36,880	22.0	0.31	13,525	8.4	0.19	2,595	1.5	0.07	21,545	12.6	0.21	11,975	7.3	0.22	9,450	6.0	0.17
Female	95,830	53.2	0.49	36,770	19.9	0.27	5,800	3.6	0.12	2,215	1.2	0.06	28,970	15.2	0.22	5,645	3.4	0.13	4,555	2.9	0.10
Age Groups																					
0–14	4,765	7.8	0.50	465	0.8	0.09	—	—	—	—	—	—	425	0.7	0.09	—	—	—	310	0.5	0.07
15–19	5,190	24.5	0.93	900	4.3	0.33	370	1.7	0.20	85	0.4	0.10	455	2.2	0.24	300	1.4	0.19	430	2.0	0.23
20–24	11,385	50.9	1.27	4,715	21.1	0.79	2,995	13.4	0.61	260	1.2	0.17	1,590	7.1	0.42	1,180	5.3	0.35	1,395	6.2	0.40
25–34	28,030	62.6	1.26	12,040	26.9	0.72	6,805	15.2	0.52	795	1.8	0.14	4,745	10.6	0.38	3,145	7.0	0.34	4,005	8.9	0.38
35–44	25,860	63.8	1.29	9,715	24.0	0.68	3,650	9.0	0.41	740	1.8	0.16	5,560	13.7	0.47	3,285	8.1	0.42	3,215	7.9	0.40
45–54	33,935	79.3	1.63	13,125	30.7	0.78	2,865	6.7	0.41	1,010	2.4	0.18	9,495	22.2	0.59	4,995	11.7	0.73	2,645	6.2	0.42
55–64	38,845	93.7	1.69	17,135	41.3	0.91	2,135	5.1	0.32	1,245	3.0	0.21	13,900	33.5	0.77	3,825	9.2	0.60	1,575	3.8	0.28
≥65	45,140	91.6	1.42	15,555	31.6	0.70	500	1.0	0.11	630	1.3	0.13	14,345	29.1	0.67	845	1.7	0.16	430	0.9	0.10

Abbreviations: No., number; SE, standard error.

[a] Weighted national estimates from HCUP Nationwide Inpatient Sample (NIS), 2016, Agency for Healthcare Research and Quality (AHRQ).

[b] In-hospital deaths and patients who transferred from another hospital were excluded. Visits with missing age and sex were excluded. Numbers subject to rounding error.

[c] Includes poisonings of accidental (unintentional) or undetermined intent. Poisonings attributable to intentional self-harm and assault were excluded.

[d] Includes ICD-10-CM/PCS codes T36–T50. See technical notes for additional information.

[e] Includes ICD-10-CM/PCS codes T40.0, T40.1, T40.2, T40.3, T40.6, T40.69.

[f] Includes ICD-10-CM/PCS code T40.1.

[g] Includes ICD-10-CM/PCS code T40.3.

[h] Includes ICD-10-CM/PCS codes T40.0, T40.2, T40.4, T40.6, T40.69.

[i] Includes ICD-10-CM/PCS code T40.5.

[j] Includes ICD-10-CM/PCS code T43.62.

[k] Rates calculated per 100,000 population. Age-adjusted to the 2000 U.S. standard population using the vintage year population of the data. Rates for age groups are crude rates.

[l] Because the relative standard error was > 30% or the standard error = 0, the value of the estimate was considered unreliable and was not reported.

[m] Rates cannot be calculated based on the available data.

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| TABLE 3B | Estimated numbers[a,b] and age-adjusted rates per 100,000 population of drug poisoning-related hospitalizations by selected substances, unintentional and undetermined intents[c] — United States, 2016 |

Socio-demographic characteristics	All drug poisonings[d]			All opioid poisonings[e]			Heroin poisonings[f]			Methadone poisonings[g]			Poisonings by other opioids[h]			Cocaine poisonings[i]			Methamphetamine poisonings[j]		
	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE
Region																					
Northeast	35,635	58.6	1.17	13,915	23.0	0.57	5,610	10.0	0.37	1,090	1.7	0.14	7,525	11.9	0.36	5,170	8.8	0.54	850	1.6	0.13
Midwest	41,325	58.0	0.97	16,605	23.1	0.56	5,540	8.4	0.36	915	1.3	0.10	10,405	13.8	0.35	3,350	4.8	0.24	2,185	3.4	0.20
South	78,705	60.5	0.70	29,025	21.9	0.35	5,725	4.7	0.17	1,710	1.3	0.08	21,945	16.1	0.28	7,665	6.2	0.23	5,000	4.3	0.16
West	37,485	46.2	0.77	14,105	16.9	0.38	2,450	3.1	0.16	1,095	1.3	0.09	10,640	12.5	0.32	1,435	1.8	0.12	5,970	7.8	0.33
Patient Residence																					
Large central metropolitan	60,060	57.3	1.00	21,540	20.1	0.46	6,515	6.2	0.25	1,795	1.7	0.10	13,665	12.7	0.31	8,240	7.8	0.35	4,235	4.2	0.19
Large fringe metropolitan	44,690	52.5	0.88	18,320	21.4	0.48	5,755	7.5	0.27	910	1.1	0.08	11,875	13.2	0.33	3,710	4.6	0.21	2,345	3.0	0.16
Medium metropolitan	42,350	59.5	1.25	16,690	23.1	0.62	4,000	6.1	0.28	1,025	1.5	0.12	11,830	15.8	0.46	3,275	4.9	0.25	3,250	5.0	0.27
Small metropolitan	17,975	57.8	1.63	6,775	21.5	0.79	1,335	4.8	0.35	385	1.2	0.15	5,095	15.7	0.63	920	3.2	0.27	1,675	6.0	0.48
Micropolitan	15,655	53.6	1.20	5,915	19.7	0.65	1,040	4.3	0.31	300	1.0	0.14	4,605	14.6	0.54	590	2.3	0.24	1,255	5.0	0.35
Noncore	10,350	50.3	1.43	3,705	17.7	0.76	365	2.3	0.29	295	1.6	0.23	3,115	14.2	0.65	390	2.2	0.27	825	5.2	0.45
Unknown	2,070	m	m	705	m	m	315	m	m	100	m	m	330	m	m	495	m	m	420	m	m

Abbreviations: No., number; SE, standard error.
[a]Weighted national estimates from HCUP Nationwide Inpatient Sample (NIS), 2016, Agency for Healthcare Research and Quality (AHRQ).
[b]In-hospital deaths and patients who transferred from another hospital were excluded. Visits with missing age and sex were excluded. Numbers subject to rounding error.
[c]Includes poisonings of accidental (unintentional) or undetermined intent. Poisonings attributable to intentional self-harm and assault were excluded.
[d]Includes ICD-10-CM/PCS codes T36-T50. See technical notes for additional informati1on.
[e]Includes ICD-10-CM/PCS codes T40.0, T40.1, T40.2, T40.3, T40.6, T40.69.
[f]Includes ICD-10-CM/PCS code T40.1.

[g]Includes ICD-10-CM/PCS code T40.3.
[h]Includes ICD-10-CM/PCS codes T40.0, T40.2, T40.4, T40.6, T40.69.
[i]Includes ICD-10-CM/PCS code T40.5.
[j]Includes ICD-10-CM/PCS code T43.62.
[k]Rates calculated per 100,000 population. Age-adjusted to the 2000 U.S. standard population using the vintage year population of the data. Rates for age groups are crude rates.
[l]Because the relative standard error was > 30% or the standard error = 0, the value of the estimate was considered unreliable and was not reported.
[m]Rates cannot be calculated based on the available data.

TABLE 3C

Estimated numbers[a,b] and age-adjusted rates per 100,000 population of drug poisoning-related emergency department visits by selected substances, all intents[c] — United States, 2016

Socio-demographic characteristics	All drug poisonings[d]			All opioid poisonings[e]			Heroin poisonings[f]			Methadone poisonings[g]			Poisonings by other opioids[h]			Cocaine poisonings[i]			Methamphetamine poisonings[j]		
	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE
All Visits	577,794	183.2	3.31	197,970	62.0	2.37	123,272	39.1	1.94	3,434	1.0	0.05	72,065	22.1	0.52	8,617	2.7	0.11	16,341	5.3	0.15
Sex																					
Male	290,607	184.2	4.04	124,643	78.2	3.18	84,453	53.3	2.59	1,810	1.1	0.08	38,967	24.2	0.72	5,654	3.6	0.15	10,268	6.7	0.23
Female	287,187	182.4	2.85	73,328	45.7	1.62	38,819	24.9	1.33	1,625	1.0	0.06	33,099	19.9	0.42	2,963	1.9	0.10	6,073	4.0	0.13
Age Groups																					
0–14	77,450	127.0	5.89	2,716	4.5	0.32	—	—	—	114	0.2	0.04	2,533	4.2	0.29	62	0.1	0.03	1,810	3.0	0.19
15–19	63,321	299.4	10.66	6,130	29.0	1.52	2,548	12.0	1.11	80	0.4	0.09	3,497	16.5	0.85	409	1.9	0.22	1,673	7.9	0.47
20–24	68,156	304.5	14.08	29,350	131.1	9.77	21,603	96.5	8.18	298	1.3	0.21	7,594	33.9	2.04	1,200	5.4	0.48	2,504	11.2	0.71
25–34	133,555	298.3	16.51	71,975	160.8	13.35	53,291	119.0	11.10	802	1.8	0.19	18,324	40.9	2.59	2,828	6.3	0.51	5,219	11.7	0.66
35–44	81,061	199.9	10.13	36,385	89.7	7.56	23,962	59.1	6.02	549	1.4	0.14	12,078	29.8	1.77	1,841	4.5	0.39	2,876	7.1	0.53
45–54	66,409	155.1	6.41	25,939	60.6	4.41	13,799	32.2	3.32	698	1.6	0.21	11,489	26.8	1.32	1,454	3.4	0.30	1,589	3.7	0.35
55–64	46,682	112.5	4.08	17,219	41.5	2.63	6,988	16.8	1.80	608	1.5	0.21	9,668	23.3	1.09	738	1.8	0.21	512	1.2	0.15
≥65	41,161	83.5	2.46	8,256	16.8	0.67	1,031	2.1	0.26	284	0.6	0.08	6,882	14.0	0.55	86	0.2	0.04	158	0.3	0.07

Abbreviations: No., number; SE, standard error.

[a] Weighted national estimates from HCUP Nationwide Emergency Department Sample (NEDS), 2016, Agency for Healthcare Research and Quality (AHRQ).

[b] Persons who were hospitalized, died, or transferred to another facility were excluded. Visits with missing age and sex were excluded. Numbers subject to rounding error.

[c] Includes poisonings of accidental (unintentional) or undetermined intent and those attributable to intentional self-harm and assault.

[d] Includes ICD-10-CM/PCS codes T36-T50. See technical notes for additional information.

[e] Includes ICD-10-CM/PCS codes T40.0, T40.1, T40.2, T40.3, T40.6, T40.69.

[f] Includes ICD-10-CM/PCS code T40.1.

[g] Includes ICD-10-CM/PCS code T40.3.

[h] Includes ICD-10-CM/PCS codes T40.0, T40.2, T40.4, T40.6, T40.69.

[i] Includes ICD-10-CM/PCS code T40.5.

[j] Includes ICD-10-CM/PCS code T43.62.

[k] Rates calculated per 100,000 population. Age-adjusted to the 2000 U.S. standard population using the vintage year population of the data. Rates for age groups are crude rates.

[l] Because the relative standard error was > 30% or the standard error = 0, the value of the estimate was considered unreliable and was not reported.

[m] Rates cannot be calculated based on the available data.

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TABLE 3C

Estimated numbers[a,b] and age-adjusted rates per 100,000 population of drug poisoning-related emergency department visits by selected substances, all intents[c] — United States, 2016

Socio-demographic characteristics	All drug poisonings[d]			All opioid poisonings[e]			Heroin poisonings[f]			Methadone poisonings[g]			Poisonings by other opioids[h]			Cocaine poisonings[i]			Methamphetamine poisonings[j]		
	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE
Region																					
Northeast	103,639	191.0	8.49	49,338	89.8	6.32	35,202	64.7	5.26	631	1.1	0.11	13,717	24.5	1.42	1,752	3.2	0.25	1,077	2.1	0.16
Midwest	149,216	228.6	9.10	56,896	87.4	6.80	38,858	60.3	5.46	596	0.9	0.10	17,638	26.5	1.51	1,673	2.6	0.22	3,656	5.8	0.31
South	206,343	173.0	5.66	65,632	54.4	4.13	38,145	32.2	3.40	1,178	1.0	0.08	26,712	21.6	0.85	4,042	3.4	0.22	5,703	5.0	0.19
West	118,597	156.0	3.68	26,105	33.1	1.51	11,067	14.2	1.09	1,029	1.3	0.14	13,999	17.7	0.56	1,150	1.5	0.14	5,906	7.8	0.46
Patient Residence																					
Large central metropolitan	159,308	159.7	4.93	48,726	46.8	2.41	29,267	28.0	1.89	1,322	1.2	0.11	18,318	17.7	0.67	2,752	2.7	0.19	4,795	4.8	0.27
Large fringe metropolitan	127,661	166.0	6.69	55,351	72.4	5.00	37,490	49.8	4.09	539	0.7	0.07	17,524	22.2	1.18	1,845	2.4	0.19	2,434	3.3	0.19
Medium metropolitan	135,762	207.8	9.91	51,675	79.3	7.72	33,899	52.8	6.30	652	1.0	0.09	17,387	25.9	1.56	2,341	3.6	0.28	3,190	5.0	0.26
Small metropolitan	56,864	200.6	8.06	15,118	53.3	4.30	8,457	30.5	3.45	327	1.1	0.15	6,361	21.8	1.11	615	2.3	0.26	1,951	7.1	0.54
Micropolitan	57,860	225.2	6.99	16,729	66.0	4.66	9,061	37.1	3.43	296	1.1	0.16	7,475	28.2	1.48	571	2.3	0.25	2,094	8.7	0.50
Noncore	33,927	196.3	4.78	7,061	40.6	2.02	2,768	17.7	1.49	209	1.2	0.21	4,097	21.8	1.00	269	1.7	0.24	1,356	8.7	0.63
Unknown	6,413	m	m	3,311	m	m	2,330	m	m	—	m	m	903	m	m	223	m	m	—	m	m

Abbreviations: No., number; SE, standard error.

[a]Weighted national estimates from HCUP Nationwide Emergency Department Sample (NEDS), 2016, Agency for Healthcare Research and Quality (AHRQ).

[b]Persons who were hospitalized, died, or transferred to another facility were excluded. Visits with missing age and sex were excluded. Numbers subject to rounding error.

[c]Includes poisonings of accidental (unintentional) or undetermined intent and those attributable to intentional self-harm and assault.

[d]Includes ICD-10-CM/PCS codes T36-T50. See technical notes for additional information.

[e]Includes ICD-10-CM/PCS codes T40.0, T40.1, T40.2, T40.3, T40.6, T40.69.

[f]Includes ICD-10-CM/PCS code T40.1.

[g]Includes ICD-10-CM/PCS code T40.3.

[h]Includes ICD-10-CM/PCS codes T40.0, T40.2, T40.4, T40.6, T40.69.

[i]Includes ICD-10-CM/PCS code T40.5.

[j]Includes ICD-10-CM/PCS code T43.62.

[k]Rates calculated per 100,000 population. Age-adjusted to the 2000 U.S. standard population using the vintage year population of the data. Rates for age groups are crude rates.

[l]Because the relative standard error was > 30% or the standard error = 0, the value of the estimate was considered unreliable and was not reported.

[m]Rates cannot be calculated based on the available data.

TABLE 3D — Estimated numbers[a,b] and age-adjusted rates per 100,000 population of drug poisoning-related emergency department visits by selected substances, unintentional and undetermined intents[c] — United States, 2016

Socio-demographic characteristics	All drug poisonings[d]			All opioid poisonings[e]			Heroin poisonings[f]			Methadone poisonings[g]			Poisonings by other opioids[h]			Cocaine poisonings[i]			Methamphetamine poisonings[j]		
	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE
All Visits	435,983	137.2	2.94	183,147	57.3	2.33	119,465	37.9	1.91	3,038	0.9	0.05	61,318	18.7	0.5	7,399	2.4	0.10	13,131	4.3	0.14
Sex																					
Male	243,504	154.1	3.80	117,939	73.9	3.13	81,874	51.6	2.55	1,612	1.0	0.07	34,941	21.7	0.70	4,867	3.1	0.14	8,532	5.5	0.21
Female	192,479	120.0	2.22	65,208	40.5	1.58	37,591	24.1	1.30	1,426	0.8	0.05	26,377	15.6	0.37	2,532	1.6	0.09	4,600	3.0	0.11
Age Groups																					
0–14	64,701	106.1	4.75	2,376	3.9	0.29	—	—	—	101	0.2	0.04	2,223	3.6	0.27	57	0.1	0.03	1,638	2.7	0.17
15–19	27,126	128.2	4.36	4,152	19.6	1.34	2,421	11.4	1.10	—	—	—	1,670	7.9	0.52	318	1.5	0.20	994	4.7	0.35
20–24	49,091	219.3	12.12	27,254	121.8	9.55	20,910	93.4	8.01	285	1.3	0.20	6,197	27.7	1.89	1,021	4.6	0.45	2,015	9.0	0.65
25–34	106,591	238.1	15.34	68,086	152.1	13.14	51,692	115.5	10.93	718	1.6	0.18	16,065	35.9	2.54	2,458	5.5	0.46	4,218	9.4	0.59
35–44	61,935	152.7	9.19	33,753	83.2	7.44	23,176	57.2	5.94	446	1.1	0.12	10,299	25.4	1.70	1,570	3.9	0.36	2,330	5.7	0.48
45–54	50,211	117.3	5.56	23,775	55.5	4.30	13,458	31.4	3.28	584	1.4	0.20	9,769	22.8	1.22	1,250	2.9	0.27	1,381	3.2	0.34
55–64	38,332	92.4	3.58	16,017	38.6	2.57	6,765	16.3	1.77	577	1.4	0.20	8,710	21.0	1.03	652	1.6	0.20	408	1.0	0.14
≥65	37,997	77.1	2.29	7,734	15.7	0.65	1,009	2.0	0.26	279	0.6	0.08	6,384	13.0	0.53	72	0.1	0.04	147	0.3	0.07

Abbreviations: No, number; SE, standard error.

[a]Weighted national estimates from HCUP Nationwide Emergency Department Sample (NEDS), 2016, Agency for Healthcare Research and Quality (AHRQ).

[b]Persons who were hospitalized, died, or transferred to another facility were excluded. Visits with missing age and sex were excluded. Numbers subject to rounding error.

[c]Includes poisonings of accidental (unintentional) or undetermined intent. Poisonings attributable to intentional self-harm and assault were excluded.

[d]Includes ICD-10-CM/PCS codes T36–T50. See technical notes for additional information.

[e]Includes ICD-10-CM/PCS codes T40.0, T40.1, T40.2, T40.3, T40.6, T40.69.

[f]Includes ICD-10-CM/PCS code T40.1.

[g]Includes ICD-10-CM/PCS code T40.3.

[h]Includes ICD-10-CM/PCS codes T40.0, T40.2, T40.4, T40.6, T40.69.

[i]Includes ICD-10-CM/PCS code T40.5.

[j]Includes ICD-10-CM/PCS code T43.62.

[k]Rates calculated per 100,000 population. Age-adjusted to the 2000 U.S. standard population using the vintage year population of the data. Rates for age groups are crude rates. Because the relative standard error was > 30% or the standard error = 0, the value of the estimate was considered unreliable and was not reported.

[m]Rates cannot be calculated based on the available data.

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TABLE 3D

Estimated numbers[a,b] and age-adjusted rates per 100,000 population of drug poisoning-related emergency department visits by selected substances, unintentional and undetermined intents[c] — United States, 2016

Socio-demographic characteristics	All drug poisonings[d]			All opioid poisonings[e]			Heroin poisonings[f]			Methadone poisonings[g]			Poisonings by other opioids[h]			Cocaine poisonings[i]			Methamphetamine poisonings[j]		
	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE
Region																					
Northeast	87,219	160.0	7.66	47,472	86.4	6.19	34,355	63.1	5.15	579	1.0	0.11	12,740	22.7	1.39	1,630	3.0	0.23	919	1.8	0.15
Midwest	112,195	170.8	8.22	52,998	81.4	6.68	37,571	58.3	5.36	506	0.8	0.09	15,067	22.6	1.47	1,377	2.1	0.19	2,787	4.4	0.27
South	156,672	130.5	5.07	60,496	50.1	4.07	37,005	31.2	3.36	1,019	0.8	0.07	22,819	18.4	0.81	3,404	2.9	0.20	4,387	3.8	0.16
West	79,897	103.8	2.85	22,181	27.9	1.45	10,534	13.5	1.07	934	1.1	0.14	10,692	13.3	0.48	988	1.3	0.14	5,038	6.7	0.43
Patient Residence																					
Large central metropolitan	117,108	116.0	3.88	44,721	42.8	2.34	28,314	27.1	1.86	1,245	1.2	0.11	15,339	14.7	0.61	2,334	2.3	0.17	4,035	4.0	0.25
Large fringe metropolitan	103,166	134.0	6.11	52,651	68.9	6.11	36,680	48.7	4.03	474	0.6	0.06	15,694	19.9	1.13	1,671	2.2	0.18	1,936	2.6	0.16
Medium metropolitan	103,345	157.5	8.97	47,779	73.2	7.58	32,723	50.9	6.20	540	0.8	0.08	14,717	21.8	1.49	1,957	3.0	0.26	2,460	3.9	0.22
Small metropolitan	40,973	143.7	6.46	13,576	47.8	4.14	8,161	29.5	3.37	288	0.9	0.14	5,142	17.5	0.98	520	1.9	0.24	1,461	5.4	0.46
Micropolitan	41,966	161.6	6.15	15,107	59.5	4.58	8,708	35.6	3.36	224	0.9	0.14	6,255	23.4	1.43	505	2.1	0.23	1,721	7.1	0.45
Noncore	24,107	136.1	3.60	6,145	35.1	1.90	2,602	16.7	1.43	179	1.0	0.19	3,355	17.4	0.87	209	1.3	0.22	1,041	6.7	0.55
Unknown	5,319	m	m	3,167	m	m	2,277	m	m	l	m	m	817	m	m	203	m	m	l	m	m

Abbreviations: No., number; SE, standard error.

[a]Weighted national estimates from HCUP Nationwide Emergency Department Sample (NEDS), 2016, Agency for Healthcare Research and Quality (AHRQ).

[b]Persons who were hospitalized, died, or transferred to another facility were excluded. Visits with missing age and sex were excluded. Numbers subject to rounding error.

[c]Includes poisonings of accidental (unintentional) or undetermined intent. Poisonings attributable to intentional self-harm and assault were excluded.

[d]Includes ICD-10-CM/PCS codes T36-T50. See technical notes for additional information.

[e]Includes ICD-10-CM/PCS codes T40.0, T40.1, T40.2, T40.3, T40.6, T40.69.

[f]Includes ICD-10-CM/PCS code T40.1.

[g]Includes ICD-10-CM/PCS code T40.3.

[h]Includes ICD-10-CM/PCS codes T40.0, T40.2, T40.4, T40.6, T40.69.

[i]Includes ICD-10-CM/PCS code T40.5.

[j]Includes ICD-10-CM/PCS code T43.62.

[k]Rates calculated per 100,000 population. Age-adjusted to the 2000 U.S. standard population using the vintage year population of the data. Rates for age groups are crude rates.

[l]Because the relative standard error was > 30% or the standard error = 0, the value of the estimate was considered unreliable and was not reported.

[m]Rates cannot be calculated based on the available data.

TABLE 3E   **Estimated number[a,b] and percentage of drug poisoning-related hospitalization and emergency department visits by primary payer, all intents[c] — United States, 2016**

	All drug poisonings[d]				All opioid poisonings[e]				Heroin poisonings[f]				Methadone poisonings[g]			
	Hospitalizations		ED visits		Hospitalizations		ED visits		Hospitalizations		ED visits		Hospitalizations		ED visits	
	No.	% (SE)	No.	% (SE)	No.	% (SE)	No.	% (SE)	No.	% (SE)	No.	% (SE)	No.	% (SE)	No.	% (SE)
Total	326,200		577,794		91,840		197,970		22,360		123,272		5,675		3,434	
Primary Payer																
Medicare	96,935	29.7 (0.27)	80,220	13.9 (0.29)	33,350	36.3 (0.44)	22,437	11.3 (0.44)	2,335	10.4 (0.47)	7,072	5.7 (0.32)	1,765	31.1 (1.46)	651	18.9 (1.68)
Medicaid	105,990	32.5 (0.37)	217,944	37.7 (0.96)	28,435	31.0 (0.49)	80,025	40.4 (1.88)	10,610	47.5 (0.95)	54,477	44.2 (2.47)	2,305	40.6 (1.64)	1,586	46.2 (2.64)
Private	77,330	23.7 (0.32)	153,260	26.5 (0.67)	18,145	19.8 (0.38)	36,190	18.3 (0.74)	4,660	20.8 (0.78)	19,638	15.9 (0.82)	880	15.5 (1.16)	490	14.3 (1.61)
Uninsured	33,980	10.4 (0.25)	101,471	17.6 (0.83)	8,925	9.7 (0.30)	50,759	25.6 (1.68)	3,960	17.7 (0.73)	36,536	29.6 (2.19)	590	10.4 (0.95)	537	15.6 (2.18)
Other	11,475	3.5 (0.17)	23,774	4.1 (0.40)	2,845	3.1 (0.22)	8,276	4.2 (0.72)	735	3.3 (0.33)	5,384	4.4 (0.92)	125	2.2 (0.43)	160	4.7 (0.98)
Unknown	490	0.2 (0.03)	k	k	140	0.2 (0.03)	k	k	k	k	k	k	k	k	k	k

Abbreviation: No., number. ED, emergency department.

[a]Weighted national estimates from HCUP Nationwide Inpatient Sample (NIS) and Nationwide Emergency Department Sample (NEDS), 2016, Agency for Healthcare Research and Quality (AHRQ).

[b]In-hospital deaths and patients who transferred from another hospital were excluded from hospitalizations. Persons who were hospitalized, died, or transferred to another facility were excluded from ED visits. Hospitalizations and ED visits with missing age and sex were excluded. Numbers subject to rounding error.

[c]Includes poisonings of accidental (unintentional) or undetermined intent and those attributable to intentional self-harm and assault.

[d]Includes ICD-10-CM/PCS codes T36-T50. See technical notes for additional information.

[e]Includes ICD-10-CM/PCS codes T40.0, T40.1, T40.2, T40.3, T40.6, T40.69.

[f]Includes ICD-10-CM/PCS code T40.1.

[g]Includes ICD-10-CM/PCS code T40.3.

[h]Includes ICD-10-CM/PCS codes T40.0, T40.2, T40.4, T40.6, T40.69.

[i]Includes ICD-10-CM/PCS code T40.5.

[j]Includes ICD-10-CM/PCS code T43.62.

[k]Because the relative standard error was > 30% or the standard error = 0, the value of the estimate was considered unreliable and was not reported.

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TABLE 3E Estimated number[a,b] and percentage of drug poisoning-related hospitalization and emergency department visits by primary payer, all intents[c] — United States, 2016

Primary Payer	Poisonings by other opioids[h]				Cocaine poisonings[i]				Methamphetamine poisonings[j]			
	Hospitalizations		ED visits		Hospitalizations		ED visits		Hospitalizations		ED visits	
	No.	% (SE)	No.	% (SE)	No.	% (SE)	No.	% (SE)	No.	% (SE)	No.	% (SE)
Total	**65,110**		**72,065**		**20,090**		**8,617**		**17,725**		**16,341**	
Primary Payer												
Medicare	29,300	45.0 (0.49)	14,657	20.3 (0.56)	3,455	17.2 (0.61)	650	7.5 (0.67)	2,315	13.1 (0.62)	957	5.9 (0.43)
Medicaid	16,190	24.9 (0.45)	24,296	33.7 (1.16)	9,260	46.1 (1.21)	3,340	38.8 (2.12)	7,790	43.9 (1.11)	6,660	40.8 (1.42)
Private	12,885	19.8 (0.40)	16,147	22.4 (0.70)	2,735	13.6 (0.71)	1,528	17.7 (1.06)	3,080	17.4 (0.76)	3,751	23.0 (1.12)
Uninsured	4,655	7.1 (0.26)	14,058	19.5 (0.91)	3,870	19.3 (1.00)	2,692	31.2 (1.94)	3,705	20.9 (0.91)	4,094	25.1 (0.97)
Other	1,995	3.1 (0.25)	2,785	3.9 (0.45)	725	3.6 (0.56)	387	4.5 (0.85)	770	4.3 (0.41)	791	4.8 (0.63)
Unknown	85	0.1 (0.03)	k	k	k	k	k	k	65	0.4 (0.10)	k	k

Abbreviation: No., number. ED, emergency department.

[a]Weighted national estimates from HCUP Nationwide Inpatient Sample (NIS) and Nationwide Emergency Department Sample (NEDS), 2016, Agency for Healthcare Research and Quality (AHRQ).

[b]In-hospital deaths and patients who transferred from another hospital were excluded from hospitalizations. Persons who were hospitalized, died, or transferred to another facility were excluded from ED visits. Hospitalizations and ED visits with missing age and sex were excluded. Numbers subject to rounding error.

[c]Includes poisonings of accidental (unintentional) or undetermined intent and those attributable to intentional self-harm and assault.

[d]Includes ICD-10-CM/PCS codes T36-T50. See technical notes for additional information.

[e]Includes ICD-10-CM/PCS codes T40.0, T40.1, T40.2, T40.3, T40.6, T40.69.

[f]Includes ICD-10-CM/PCS code T40.1.

[g]Includes ICD-10-CM/PCS code T40.3.

[h]Includes ICD-10-CM/PCS codes T40.0, T40.2, T40.4, T40.6, T40.69.

[i]Includes ICD-10-CM/PCS code T40.5.

[j]Includes ICD-10-CM/PCS code T43.62.

[k]Because the relative standard error was > 30% or the standard error = 0, the value of the estimate was considered unreliable and was not reported.

TABLE 3F — Estimated number[a,b] and percentage of drug poisoning-related hospitalization and emergency department visits by primary payer, unintentional and undetermined intents[c] — United States, 2016

Primary Payer	All drug poisonings[d]				All opioid poisonings[e]				Heroin poisonings[f]				Methadone poisonings[g]			
	Hospitalizations		ED visits		Hospitalizations		ED visits		Hospitalizations		ED visits		Hospitalizations		ED visits	
	No.	% (SE)	No.	% (SE)	No.	% (SE)	No.	% (SE)	No.	% (SE)	No.	% (SE)	No.	% (SE)	No.	% (SE)
Total	193,150		435,983		73,650		183,147		19,325		119,465		4,810		3,038	
Primary Payer																
Medicare	72,960	37.8 (0.35)	67,302	15.4 (0.38)	28,775	39.1 (0.49)	20,670	11.3 (0.46)	2,045	10.6 (0.50)	6,843	5.7 (0.33)	1,515	31.5 (1.60)	606	20.0 (1.82)
Medicaid	58,820	30.5 (0.43)	165,796	38.0 (1.09)	22,385	30.4 (0.53)	74,743	40.8 (1.98)	9,120	47.2 (1.00)	52,858	44.2 (2.50)	2,000	41.6 (1.79)	1,418	46.7 (2.82)
Private	35,770	18.5 (0.32)	103,330	23.7 (0.67)	13,155	17.9 (0.40)	31,815	17.4 (0.75)	4,055	21.0 (0.82)	18,916	15.8 (0.84)	715	14.9 (1.23)	405	13.3 (1.62)
Uninsured	19,570	10.1 (0.27)	81,511	18.7 (0.99)	7,195	9.8 (0.32)	48,141	26.3 (1.77)	3,455	17.9 (0.77)	35,560	29.8 (2.22)	485	10.1 (1.02)	467	15.4 (2.30)
Other	5,760	3.0 (0.16)	17,332	4.0 (0.44)	2,025	2.7 (0.19)	7,552	4.1 (0.74)	605	3.1 (0.32)	5,146	4.3 (0.91)	85	1.8 (0.42)	137	4.5 (0.98)
Unknown	270	0.1 (0.03)	k	k	115	0.2 (0.04)	k	k	k	k	k	k	k	k	k	k

Abbreviation: No., number. ED, emergency department.

[a] Weighted national estimates from HCUP Nationwide Inpatient Sample (NIS) and Nationwide Emergency Department Sample (NEDS), 2016, Agency for Healthcare Research and Quality (AHRQ).

[b] In-hospital deaths and patients who transferred from another hospital were excluded from hospitalizations. Persons who were hospitalized, died, or transferred to another facility were excluded from ED visits. Hospitalizations and ED visits with missing age and sex were excluded. Numbers subject to rounding error.

[c] Includes poisonings of accidental (unintentional) or undetermined intent. Poisonings attributable to intentional self-harm and assault were excluded.

[d] Includes ICD-10-CM/PCS codes T36-T50. See technical notes for additional information.

[e] Includes ICD-10-CM/PCS codes T40.0, T40.1, T40.2, T40.3, T46.6, T40.69.

[f] Includes ICD-10-CM/PCS code T40.1.

[g] Includes ICD-10-CM/PCS code T40.3.

[h] Includes ICD-10-CM/PCS codes T40.0, T40.2, T40.4, T46.6, T40.69.

[i] Includes ICD-10-CM/PCS code T40.5.

[j] Includes ICD-10-CM/PCS code T43.62.

[k] Because the relative standard error was > 30% or the standard error = 0, the value of the estimate was considered unreliable and was not reported.

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| TABLE 3F | Estimated number[a,b] and percent of drug poisoning-related hospitalization and emergency department visits by primary payer, unintentional and undetermined intents[c] — United States, 2016 |

	Poisonings by other opioids[h]				Cocaine poisonings[i]				Methamphetamine poisonings[j]			
	Hospitalizations		ED visits		Hospitalizations		ED visits		Hospitalizations		ED visits	
	No.	% (SE)	No.	% (SE)	No.	% (SE)	No.	% (SE)	No.	% (SE)	No.	% (SE)
Total	**50,515**		**61,318**		**17,620**		**7,399**		**14,005**		**13,131**	
Primary Payer												
Medicare	25,195	49.9 (0.55)	13,149	21.4 (0.67)	3,045	17.3 (0.65)	533	7.2 (0.74)	1,945	13.9 (0.72)	765	5.8 (0.49)
Medicaid	11,795	23.3 (0.50)	20,781	33.9 (1.28)	8,205	46.6 (1.28)	2,907	39.3 (2.25)	6,395	45.7 (1.23)	5,537	42.2 (1.50)
Private	8,630	17.1 (0.43)	12,561	20.5 (0.70)	2,370	13.5 (0.74)	1,297	17.5 (1.14)	2,040	14.6 (0.80)	2,729	20.8 (1.13)
Uninsured	3,485	6.9 (0.28)	12,433	20.3 (1.02)	3,365	19.1 (1.06)	2,352	31.8 (2.10)	3,000	21.4 (1.00)	3,409	26.0 (1.08)
Other	1,340	2.7 (0.20)	2,305	3.8 (0.49)	595	3.4 (0.59)	302	4.1 (0.82)	565	4.0 (0.44)	619	4.7 (0.65)
Unknown	70	0.1 (0.04)	k	k	k	k	k	k	60	0.4 (0.12)	k	k

Abbreviation: No., number. ED, emergency department.

[a] Weighted national estimates from HCUP Nationwide Inpatient Sample (NIS) and Nationwide Emergency Department Sample (NEDS), 2016, Agency for Healthcare Research and Quality (AHRQ).

[b] In-hospital deaths and patients who transferred from another hospital were excluded from hospitalizations. Persons who were hospitalized, died, or transferred to another facility were excluded from ED visits. Hospitalizations and ED visits with missing age and sex were excluded. Numbers subject to rounding error.

[c] Includes poisonings of accidental (unintentional) or undetermined intent. Poisonings attributable to intentional self-harm and assault were excluded.

[d] Includes ICD-10-CM/PCS codes T36-T50. See technical notes for additional information.

[e] Includes ICD-10-CM/PCS codes T40.0, T40.1, T40.2, T40.3, T40.6, T40.69.

[f] Includes ICD-10-CM/PCS code T40.1.

[g] Includes ICD-10-CM/PCS code T40.3.

[h] Includes ICD-10-CM/PCS codes T40.0, T40.2, T40.4, T40.6, T40.69.

[i] Includes ICD-10-CM/PCS code T40.5.

[j] Includes ICD-10-CM/PCS code T43.62.

[k] Because the relative standard error was > 30% or the standard error = 0, the value of the estimate was considered unreliable and was not reported.

TABLE 4A

Number and age-adjusted rates[a] per 100,000 population of overall drug overdose deaths[b] and drug overdose deaths involving any type of opioid, by sex, age group, race/ethnicity, census region, urbanization, and intent — United States, 2017

Socio-demographic characteristic	Drug overdose deaths, overall			Drug overdose deaths involving any opioid[c]		
	Number	Rate	SE	Number	Rate	SE
All	70,237	21.7	0.084	47,600	14.9	0.069
Sex						
Male	46,552	29.1	0.137	32,337	20.4	0.115
Female	23,685	14.4	0.096	15,263	9.4	0.077
Age group (years)						
0–14	147	0.2	0.020	79	0.1	0.015
15–19	822	3.9	0.136	507	2.4	0.107
20–24	4,633	20.9	0.308	3,587	16.2	0.271
25–34	17,400	38.4	0.291	13,181	29.1	0.253
35–44	15,949	39.0	0.309	11,149	27.3	0.258
45–54	15,996	37.7	0.298	10,207	24.1	0.238
55–64	11,747	28.0	0.258	7,153	17.0	0.201
≥ 65	3,529	6.9	0.117	1,724	3.4	0.082
Race/ethnicity[d]						
White, non-Hispanic	53,516	27.5	0.123	37,113	19.4	0.104
Black, non-Hispanic	8,832	20.6	0.223	5,513	12.9	0.177
Asian/Pacific Islander, non-Hispanic	756	3.5	0.129	348	1.6	0.086
American Indian/Alaska Native, non-Hispanic	672	25.7	1.012	408	15.7	0.792
Hispanic	5,988	10.6	0.139	3,932	6.8	0.111
U.S. Census region of residence[e]						
Northeast	16,579	29.8	0.237	11,784	21.3	0.201
Midwest	16,679	25.4	0.201	12,483	19.1	0.175
South	25,272	20.7	0.132	16,999	14.1	0.110
West	11,707	14.7	0.138	6,334	8.0	0.102

Source: National Vital Statistics System, Mortality File.

Abbreviation: SE, standard error.

[a] Rate per 100,000 population age-adjusted to the 2000 U.S. standard population using the vintage year population of the data year. Rates are suppressed when based on <20 deaths. Rates for age groups are crude rates (deaths per 100,000 population).

[b] Deaths are classified using the International Classification of Diseases, Tenth Revision (ICD–10). Drug overdose deaths are identified using underlying cause-of-death codes X40–X44 (unintentional), X60–X64 (suicide), X85 (homicide), and Y10–Y14 (undetermined). Because deaths might involve more than one drug, some deaths are included in more than one category. On death certificates, the specificity of drugs involved with deaths varies over time. In 2017, approximately 12% of drug overdose deaths did not include information on the specific type of drug(s) involved.

[c] Drug overdose deaths, as defined using ICD-10 codes, that involve opium (T40.0), heroin (T40.1), natural and semi-synthetic opioids (T40.2), methadone (T40.3), synthetic opioids other than methadone (T40.4) and other and unspecified narcotics (T40.6).

[d] Data for Hispanic origin should be interpreted with caution; studies comparing Hispanic origin on death certificates and on census surveys have shown inconsistent reporting on Hispanic ethnicity. Potential race misclassification might lead to underestimates for certain categories, primarily American Indian/Alaska Native non-Hispanic and Asian/Pacific Islander non-Hispanic decedents. https://www.cdc.gov/nchs/data/series/sr_02/sr02_172.pdf.

[e] Census regions are defined by the following jurisdictions: Region 1 (Northeast): Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont; Region 2 (Midwest): Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin; Region 3 (South): Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia; Region 4 (West): Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

[f] Categories of 2013 NCHS Urban-Rural Classification Scheme for Counties.

TABLE 4A

Number and age-adjusted rates[a] per 100,000 population of overall drug overdose deaths[b] and drug overdose deaths involving any type of opioid, by sex, age group, race/ethnicity, census region, urbanization, and intent — United States, 2017

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Socio-demographic characteristic	Drug overdose deaths, overall			Drug overdose deaths involving any opioid[c]		
	Number	Rate	SE	Number	Rate	SE
2013 Urbanization[f]						
Large central metropolitan	21,219	20.2	0.141	14,518	13.9	0.117
Large fringe metropolitan	18,897	23.7	0.175	13,594	17.2	0.150
Medium metropolitan	15,875	24.1	0.196	10,561	16.2	0.161
Small metropolitan	5,721	20.5	0.279	3,560	12.9	0.222
Micropolitan	5,386	21.3	0.298	3,462	13.9	0.243
Noncore	3,139	18.2	0.337	1,905	11.2	0.265
Intent						
Unintentional	61,311	19.1	0.078	43,036	13.5	0.066
Undetermined	3,687	1.1	0.019	2,586	0.8	0.016
Suicide	5,097	1.5	0.021	1,884	0.5	0.012

Source: National Vital Statistics System, Mortality File.
Abbreviation: SE, standard error.

[a]Rate per 100,000 population age-adjusted to the 2000 U.S. standard population using the vintage year population of the data year. Rates are suppressed when based on <20 deaths. Rates for age groups are crude rates (deaths per 100,000 population).

[b]Deaths are classified using the International Classification of Diseases, Tenth Revision (ICD–10). Drug overdose deaths are identified using underlying cause-of-death codes X40–X44 (unintentional), X60–X64 (suicide), X85 (homicide), and Y10–Y14 (undetermined). Because deaths might involve more than one drug, some deaths are included in more than one category. On death certificates, the specificity of drugs involved with deaths varies over time. In 2017, approximately 12% of drug overdose deaths did not include information on the specific type of drug(s) involved.

[c]Drug overdose deaths, as defined using ICD-10 codes, that involve opium (T40.0), heroin (T40.1), natural and semi-synthetic opioids (T40.2), methadone (T40.3), synthetic opioids other than methadone (T40.4) and other and unspecified narcotics (T40.6).

[d]Data for Hispanic origin should be interpreted with caution; studies comparing Hispanic origin on death certificates and on census surveys have shown inconsistent reporting on Hispanic ethnicity. Potential race misclassification might lead to underestimates for certain categories, primarily American Indian/Alaska Native non-Hispanic and Asian/Pacific Islander non-Hispanic decedents. https://www.cdc.gov/nchs/data/series/sr_02/sr02_172.pdf.

[e]Census regions are defined by the following jurisdictions: Region 1 (Northeast): Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont; Region 2 (Midwest): Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin; Region 3 (South): Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia; Region 4 (West): Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

[f]Categories of 2013 NCHS Urban-Rural Classification Scheme for Counties.

TABLE 4B | **Number and age-adjusted rates[a] per 100,000 population of drug overdose deaths[b] involving selected opioids by sex, age group, race/ethnicity, census region, urbanization, and intent — United States, 2017**

	Prescription opioids[c]			Natural and semi-synthetic opioids[d]			Methadone[e]			Heroin[f]			Synthetic opioids other than methadone[g]		
	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE
All	17,029	5.2	0.041	14,495	4.4	0.037	3,194	1.0	0.018	15,482	4.9	0.040	28,466	9.0	0.054
Sex															
Male	9,873	6.1	0.063	8,398	5.2	0.058	1,867	1.1	0.027	11,596	7.3	0.069	20,524	13.0	0.092
Female	7,156	4.2	0.052	6,097	3.6	0.047	1,327	0.8	0.022	3,886	2.5	0.040	7,942	5.0	0.057
Age group (years)															
0–14	50	0.1	0.012	36	0.1	0.010	16	h		h	h		33	0.1	0.009
15–19	154	0.7	0.059	124	0.6	0.053	33	0.2	0.027	140	0.7	0.056	312	1.5	0.084
20–24	896	4.1	0.135	786	3.6	0.127	132	0.6	0.052	1,314	5.9	0.164	2,343	10.6	0.219
25–34	3,408	7.5	0.129	2,854	6.3	0.118	665	1.5	0.057	4,890	10.8	0.154	8,825	19.5	0.207
35–44	3,714	9.1	0.149	3,129	7.7	0.137	743	1.8	0.067	3,713	9.1	0.149	7,084	17.3	0.206
45–54	4,238	10.0	0.154	3,659	8.6	0.143	746	1.8	0.064	3,043	7.2	0.130	5,762	13.6	0.179
55–64	3,509	8.4	0.141	2,965	7.1	0.130	710	1.7	0.063	2,005	4.8	0.107	3,481	8.3	0.140
≥ 65	1,055	2.1	0.064	937	1.8	0.060	149	0.3	0.024	368	0.7	0.038	620	1.2	0.049
Race/ethnicity[i]															
White, non-Hispanic	13,900	6.9	0.061	11,921	5.9	0.056	2,488	1.2	0.026	11,293	6.1	0.059	21,956	11.9	0.082
Black, non-Hispanic	1,508	3.5	0.093	1,247	2.9	0.084	330	0.7	0.042	2,140	4.9	0.109	3,832	9.0	0.147
Asian/Pacific Islander, non-Hispanic	130	0.6	0.052	117	0.5	0.050	17	h		119	0.5	0.050	189	0.8	0.062
American Indian/Alaska Native, non-Hispanic	187	7.2	0.540	147	5.7	0.483	47	1.8	0.261	136	5.2	0.458	171	6.5	0.507
Hispanic	1,211	2.2	0.063	994	1.8	0.057	284	0.5	0.031	1,669	2.9	0.072	2,152	3.7	0.081

Source: National Vital Statistics System, Mortality File.
Abbreviation: SE, standard error.
[a]Rate per 100,000 population age-adjusted to the 2000 U.S. standard population using the vintage year population of the data year. Rates are suppressed when based on <20 deaths. Rates for age groups are crude rates (deaths per 100,000 population).
[b]Deaths are classified using the International Classification of Diseases, Tenth Revision (ICD-10). Drug overdose deaths are identified using underlying cause-of-death codes X40–X44 (unintentional), X60–X64 (suicide), X85 (homicide), and Y10–Y14 (undetermined). Because deaths might involve more than one drug, some deaths are included in more than one category. On death certificates, the specificity of drugs involved with deaths varies over time. In 2017, approximately 12% of drug overdose deaths did not include information on the specific type of drug(s) involved.
[c]Drug overdose deaths, as defined, that involve natural and semi-synthetic opioids (T40.2) and methadone (T40.3).
[d]Drug overdose deaths, as defined, that involve natural and semi-synthetic opioids (T40.2).
[e]Drug overdose deaths, as defined, that involve methadone (T40.3).
[f]Drug overdose deaths, as defined, that involve heroin (T40.1).

[g]Drug overdose deaths, as defined, that involve synthetic opioids other than methadone (T40.4).
[h]Cells with nine or fewer deaths are not reported. Rates based on <20 deaths are not considered reliable and not reported.
[i]Data for Hispanic origin should be interpreted with caution; studies comparing Hispanic origin on death certificates and on census surveys have shown inconsistent reporting on Hispanic ethnicity. Potential race and ethnicity misclassification might lead to underestimates for certain categories, primarily American Indian/Alaska Native, non-Hispanic and Asian/Pacific Islander non-Hispanic decedents. https://www.cdc.gov/nchs/data/series/sr_02/sr02_172.pdf.
[j]Census regions are defined by the following jurisdictions: Region 1 (Northeast): Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont; Region 2 (Midwest): Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin; Region 3 (South): Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia; Region 4 (West): Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.
[k]Categories of 2013 NCHS Urban-Rural Classification Scheme for Counties

CONTINUED

TABLE 4B — Number and age-adjusted rates[a] per 100,000 population of drug overdose deaths[b] involving selected opioids by sex, age group, race/ethnicity, census region, urbanization, and intent — United States, 2017

	Prescription opioids[c]			Natural and semi-synthetic opioids[d]			Methadone[e]			Heroin[f]			Synthetic opioids other than methadone[g]		
	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE	Number	Rate	SE
U.S. Census region of residence[j]															
Northeast	3,047	5.3	0.099	2,478	4.3	0.089	692	1.2	0.046	4,310	7.8	0.122	8,861	16.2	0.176
Midwest	3,702	5.5	0.093	3,175	4.7	0.086	641	1.0	0.039	4,228	6.5	0.102	8,234	12.8	0.143
South	6,929	5.6	0.069	6,032	4.9	0.064	1,148	0.9	0.028	4,776	4.0	0.059	9,906	8.3	0.085
West	3,351	4.1	0.073	2,810	3.5	0.067	713	0.9	0.034	2,168	2.8	0.061	1,465	1.9	0.050
2013 Urbanization[k]															
Large central metropolitan	4,945	4.7	0.068	4,029	3.8	0.061	1,123	1.1	0.032	5,820	5.6	0.074	8,511	8.2	0.090
Large fringe metropolitan	4,273	5.2	0.082	3,669	4.5	0.075	782	1.0	0.035	4,526	5.8	0.088	8,991	11.6	0.124
Medium metropolitan	3,951	5.9	0.096	3,384	5.0	0.089	688	1.0	0.040	2,973	4.6	0.087	6,254	9.8	0.126
Small metropolitan	1,479	5.2	0.140	1,287	4.5	0.130	249	0.9	0.060	972	3.6	0.117	1,878	7.0	0.164
Micropolitan	1,440	5.6	0.152	1,296	5.0	0.144	204	0.8	0.060	801	3.3	0.118	1,860	7.7	0.181
Noncore	941	5.3	0.179	830	4.6	0.167	148	0.9	0.074	390	2.4	0.126	972	6.0	0.196
Intent															
Unintentional	14,502	4.4	0.038	12,255	3.8	0.035	2,831	0.9	0.016	14,762	4.6	0.039	26,211	8.3	0.052
Undetermined	1,076	0.3	0.010	869	0.3	0.009	265	0.1	0.005	573	0.2	0.007	1,707	0.5	0.013
Suicide	1,425	0.4	0.010	1,349	0.4	0.010	93	0.01	0.002	121	0.03	0.004	484	0.2	0.007

Source: National Vital Statistics System, Mortality File.

Abbreviation: SE, standard error.

[a] Rate per 100,000 population age-adjusted to the 2000 U.S. standard population using the vintage year population of the data year. Rates are suppressed when based on <20 deaths. Rates for age groups are crude rates (deaths per 100,000 population).

[b] Deaths are classified using the International Classification of Diseases, Tenth Revision (ICD–10). Drug overdose deaths are identified using underlying cause-of-death codes X40–X44 (unintentional), X60–X64 (suicide), X85 (homicide), and Y10–Y14 (undetermined). Because deaths might involve more than one drug, some deaths are included in more than one category. On death certificates, the specificity of drugs involved with deaths varies over time. In 2017, approximately 12% of drug overdose deaths did not include information on the specific type of drug(s) involved.

[c] Drug overdose deaths, as defined, that involve natural and semi-synthetic opioids (T40.2) and methadone (T40.3).

[d] Drug overdose deaths, as defined, that involve natural and semi-synthetic opioids (T40.2).

[e] Drug overdose deaths, as defined, that involve methadone (T40.3).

[f] Drug overdose deaths, as defined, that involve heroin (T40.1).

[g] Drug overdose deaths, as defined, that involve synthetic opioids other than methadone (T40.4).

[h] Cells with nine or fewer deaths are not reported. Rates based on <20 deaths are not considered reliable and not reported.

[i] Data for Hispanic origin should be interpreted with caution; studies comparing Hispanic origin on death certificates and on census surveys have shown inconsistent reporting on Hispanic ethnicity. Potential race and ethnicity misclassification might lead to underestimates for certain categories, primarily American Indian/Alaska Native, non-Hispanic and Asian/Pacific Islander non-Hispanic decedents. https://www.cdc. gov/nchs/data/series/sr_02/sr02_172.pdf.

[j] Census regions are defined by the following jurisdictions: Region 1 (Northeast): Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont; Region 2 (Midwest): Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin; Region 3 (South): Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia; Region 4 (West): Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

[k] Categories of 2013 NCHS Urban–Rural Classification Scheme for Counties

TABLE 4C

Number and age-adjusted rates[a] per 100,000 population of drug overdose deaths[b] involving cocaine and other psychostimulants with abuse potential by sex, age group, race/ethnicity, census region, urbanization, and intent — United States, 2017

| Socio-demographic characteristic | Drug overdose deaths involving: | | | | | |
| | Cocaine[c] | | | Psychostimulants with abuse potential[d] | | |
	Number	Rate	SE	Number	Rate	SE
All	13,942	4.3	0.037	10,333	3.2	0.032
Sex						
Male	10,021	6.2	0.064	7,240	4.5	0.054
Female	3,921	2.5	0.040	3,093	1.9	0.036
Age group (years)						
0–14	e	e		e	e	
15–19	111	0.5	0.050	108	0.5	0.049
20–24	813	3.7	0.129	672	3.0	0.117
25–34	3,463	7.6	0.130	2,593	5.7	0.112
35–44	3,282	8.0	0.140	2,548	6.2	0.123
45–54	3,497	8.3	0.140	2,477	5.8	0.117
55–64	2,335	5.6	0.115	1,648	3.9	0.097
≥ 65	432	0.8	0.041	278	0.5	0.033
Race/ethnicity[f]						
White, non-Hispanic	8,614	4.6	0.051	7,995	4.2	0.048
Black, non-Hispanic	3,554	8.3	0.141	663	1.6	0.062
Asian/Pacific Islander, non-Hispanic	129	0.6	0.053	218	1.0	0.068
American Indian/Alaska Native, non-Hispanic	65	2.4	0.311	222	8.5	0.585
Hispanic	1,438	2.5	0.067	1,125	2.0	0.060

Source: National Vital Statistics System, Mortality File.

Abbreviation: SE, standard error.

[a]Rate per 100,000 population age-adjusted to the 2000 U.S. standard population using the vintage year population of the data year. Rates are suppressed when based on <20 deaths. Rates for age groups are crude rates (deaths per 100,000 population).

[b]Deaths are classified using the International Classification of Diseases, Tenth Revision (ICD–10). Drug overdose deaths are identified using underlying cause-of-death codes X40–X44 (unintentional), X60–X64 (suicide), X85 (homicide), and Y10–Y14 (undetermined). Because deaths might involve more than one drug, some deaths are included in more than one category. On death certificates, the specificity of drugs involved with deaths varies over time. In 2017, approximately 12% of drug overdose deaths did not include information on the specific type of drug(s) involved.

[c]Drug overdose deaths, as defined, that involve cocaine (T40.5).

[d]Drug overdose deaths, as defined, that involve psychostimulants with abuse potential (T43.6).

[e]Cells with nine or fewer deaths are not reported. Rates based on <20 deaths are not considered reliable and not reported.

[f]Data for Hispanic origin should be interpreted with caution; studies comparing Hispanic origin on death certificates and on census surveys have shown inconsistent reporting on Hispanic ethnicity. Potential race and ethnicity misclassification might lead to underestimates for certain categories, primarily American Indian/Alaska Native non-Hispanic and Asian/Pacific Islander non-Hispanic decedents. https://www.cdc.gov/nchs/data/series/sr_02/sr02_172.pdf.

[g]Census regions are defined by the following jurisdictions: Region 1 (Northeast): Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont; Region 2 (Midwest): Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin; Region 3 (South): Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia; Region 4 (West): Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

[h]Categories of 2013 NCHS Urban-Rural Classification Scheme for Counties.

TABLE 4C

Number and age-adjusted rates[a] per 100,000 population of drug overdose deaths[b] involving cocaine and other psychostimulants with abuse potential by sex, age group, race/ethnicity, census region, urbanization, and intent — United States, 2017

CONTINUED

| Socio-demographic characteristic | Drug overdose deaths involving: | | | | | |
| | Cocaine[c] | | | Psychostimulants with abuse potential[d] | | |
	Number	Rate	SE	Number	Rate	SE
U.S. Census region of residence[g]						
Northeast	3,860	7.0	0.115	648	1.2	0.049
Midwest	3,711	5.6	0.095	1,959	3.1	0.071
South	5,365	4.4	0.061	3,508	3.0	0.051
West	1,006	1.3	0.041	4,218	5.3	0.084
2013 Urbanization[h]						
Large central metropolitan	5,513	5.3	0.072	3,178	3.0	0.055
Large fringe metropolitan	3,701	4.7	0.078	1,843	2.3	0.055
Medium metropolitan	2,945	4.5	0.085	2,672	4.1	0.081
Small metropolitan	777	2.9	0.106	972	3.6	0.118
Micropolitan	740	3.0	0.113	994	4.0	0.130
Noncore	266	1.6	0.104	674	4.1	0.162
Intent						
Unintentional	13,253	4.1	0.037	9,786	3.1	0.032
Undetermined	558	0.2	0.008	269	0.1	0.006
Suicide	120	0.04	0.004	249	0.1	0.006

Source: National Vital Statistics System, Mortality File.

Abbreviation: SE, standard error.

[a] Rate per 100,000 population age-adjusted to the 2000 U.S. standard population using the vintage year population of the data year. Rates are suppressed when based on <20 deaths. Rates for age groups are crude rates (deaths per 100,000 population).

[b] Deaths are classified using the International Classification of Diseases, Tenth Revision (ICD–10). Drug overdose deaths are identified using underlying cause-of-death codes X40–X44 (unintentional), X60–X64 (suicide), X85 (homicide), and Y10–Y14 (undetermined). Because deaths might involve more than one drug, some deaths are included in more than one category. On death certificates, the specificity of drugs involved with deaths varies over time. In 2017, approximately 12% of drug overdose deaths did not include information on the specific type of drug(s) involved.

[c] Drug overdose deaths, as defined, that involve cocaine (T40.5).

[d] Drug overdose deaths, as defined, that involve psychostimulants with abuse potential (T43.6).

[e] Cells with nine or fewer deaths are not reported. Rates based on <20 deaths are not considered reliable and not reported.

[f] Data for Hispanic origin should be interpreted with caution; studies comparing Hispanic origin on death certificates and on census surveys have shown inconsistent reporting on Hispanic ethnicity. Potential race and ethnicity misclassification might lead to underestimates for certain categories, primarily American Indian/Alaska Native non-Hispanic and Asian/Pacific Islander non-Hispanic decedents. https://www.cdc.gov/nchs/data/series/sr_02/sr02_172.pdf.

[g] Census regions are defined by the following jurisdictions: Region 1 (Northeast): Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont; Region 2 (Midwest): Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin; Region 3 (South): Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia; Region 4 (West): Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

[h] Categories of 2013 NCHS Urban-Rural Classification Scheme for Counties.
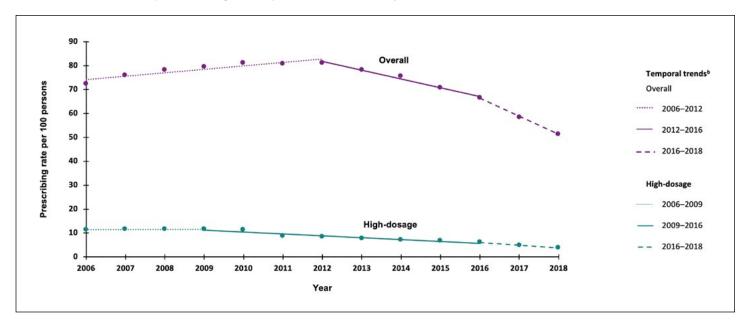
FIGURES

FIGURE 1A   **Trends in opioid prescriptions filled**

Rates for overall annual opioid prescriptions filled per 100 persons and for high-dosage prescriptions (≥ 90 morphine milligram equivalent [MME]/day)[a] — United States, 2006-2018

Source: : IQVIA™ Xponent 2006-2018. Data extracted in 2019. (Supplemental Table 1a).
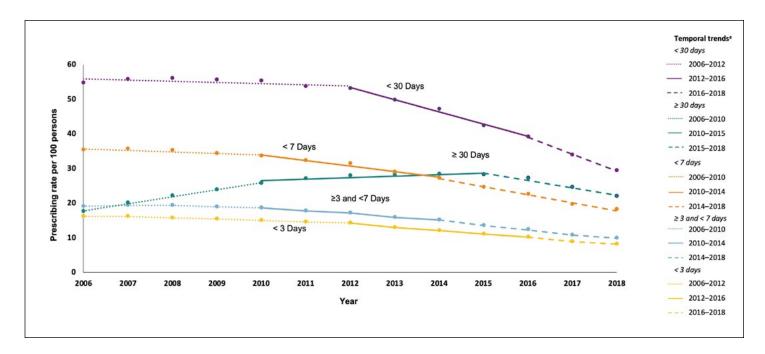
[a]High-dosage prescriptions were defined as opioid prescriptions filled resulting in a daily dosage of ≥ 90 morphine milligram equivalents.

[b]Temporal trends from 2006 to 2018 were evaluated by applying joinpoint regression methodology. This modeling approach simultaneously identified statistically significant trends as well as shifts in trends that occurred within a time series. A maximum of two joinpoints were allowed, and the permutation method was used for model selection. Different line dashes correspond to year groupings as determined by joinpoint regression. When analyzing trends using IQVIA™ data, data were compared with and without the IQVIA™ data modification starting in 2017 and found no significant differences in our findings.

FIGURE 1B   **Trends in opioid prescriptions filled**

Rates for overall annual opioid prescriptions filled per 100 persons rates by days of supply per prescription — United States, 2006-2018
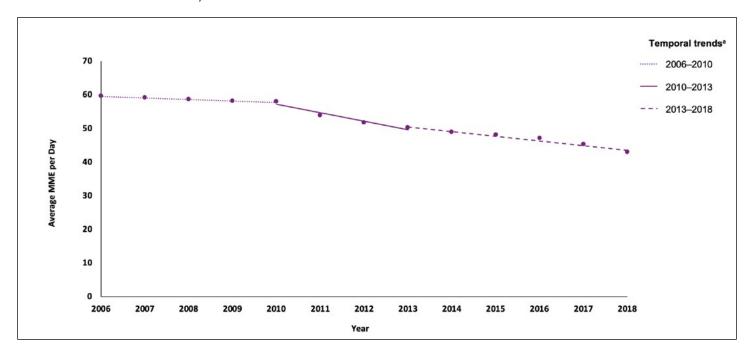

Source: IQVIA™ Xponent 2006-2018. Data extracted in 2019. (Supplemental Table 1a).
[a]Temporal trends from 2006 to 2018 were evaluated by applying joinpoint regression methodology. This modeling approach simultaneously identified statistically significant trends as well as shifts in trends that occurred within a time series. A maximum of two joinpoints were allowed, and the permutation method was used for model selection. Different line dashes correspond to year groupings as determined by joinpoint regression. When analyzing trends using IQVIA™ data, data were compared with and without the IQVIA™ data modification starting in 2017 and found no significant differences in our findings.

FIGURE 1C   **Trends in opioid prescriptions filled**

Average daily morphine milligram equivalents (MME) per opioid prescription dispensed — United States, 2006-2018

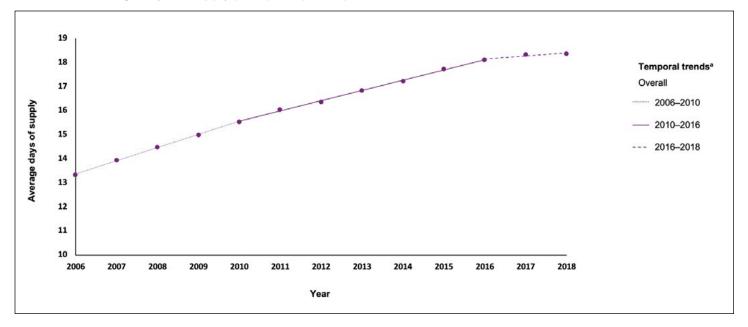Source: IQVIA™ Xponent 2006-2018. Data extracted in 2019. (Supplemental Table 1a).
Abbreviation: MME, morphine milligram equivalents.
[a]Temporal trends from 2006 to 2018 were evaluated by applying joinpoint regression methodology. This modeling approach simultaneously identified statistically significant trends as well as shifts in trends that occurred within a time series. A maximum of two joinpoints were allowed, and the permutation method was used for model selection. Different line dashes correspond to year groupings as determined by joinpoint regression. When analyzing trends using IQVIA™ data, data were compared with and without the IQVIA™ data modification starting in 2017 and found no significant differences in our findings.

| FIGURE 1D | **Trends in opioid prescriptions filled** |

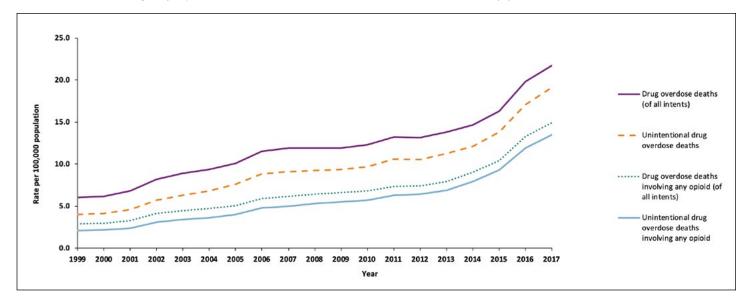## Average days of supply per opioid prescription filled — United States, 2006-2018

Source: IQVIA™ Xponent 2006-2018. Data extracted in 2019. (Supplemental Table 1a).

[a]Temporal trends from 2006 to 2018 were evaluated by applying joinpoint regression methodology. This modeling approach simultaneously identified statistically significant trends as well as shifts in trends that occurred within a time series. A maximum of two joinpoints were allowed, and the permutation method was used for model selection. Different line dashes correspond to year groupings as determined by joinpoint regression. When analyzing trends using IQVIA™ data, data were compared with and without the IQVIA™ data modification starting in 2017 and found no significant differences in our findings.

FIGURE 2A   **Trends in drug overdose deaths**

Age-adjusted rates[a] per 100,000 population of drug overdose deaths[b] and drug overdose deaths involving any opioid[c] for all intents and for unintentional intent by year — United States, 1999-2017

Source: National Vital Statistics System, Mortality File, CDC WONDER.
[a]Rate per 100,000 population age-adjusted to the 2000 U.S. standard population using the vintage year population of the data year.
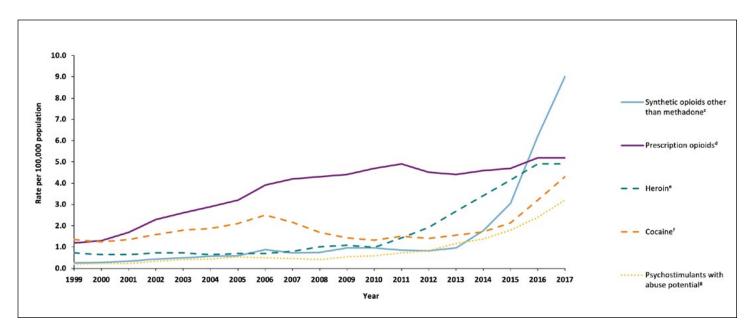[b]Deaths are classified using the International Classification of Diseases, Tenth Revision (ICD–10). All drug overdose deaths are identified using underlying cause-of-death codes X40–X44 (unintentional), X60–X64 (suicide), X85 (homicide), and Y10–Y14 (undetermined). Unintentional drug overdose deaths are identified using underlying cause-of-death codes X40–X44. Note that overall drug overdose deaths and opioid overdose deaths include deaths of any intent. In 2017, 5.2% of drug overdose deaths had undetermined intent; this is a decrease from 14.7% of drug overdose deaths that had an undetermined intent in 1999. Some of these deaths may be unintentional drug overdose deaths.
[c]Drug overdose deaths, as defined, that involve opium (T40.0), heroin (T40.1), natural and semi-synthetic opioids (T40.2), methadone (T40.3), other synthetic opioids excluding methadone (T40.4), and other and unspecified narcotics (T40.6). Specification on death certificates of drugs involved with deaths varies over time. In 2017, approximately 12% of drug overdose deaths did not include information on the specific type of drug(s) involved. Some of these deaths may have involved opioids.

| FIGURE 2B | **Trends in drug overdose deaths** |

Age-adjusted rates[a] per 100,000 population of drug overdose deaths[b] by drug or drug class and year — United States, 1999-2017

Source: National Vital Statistics System, Mortality File, CDC WONDER.

[a]Rate per 100,000 population age-adjusted to the 2000 U.S. standard population using the vintage year population of the data year. Because deaths might involve more than one drug, some deaths are included in more than one category. Specification on death certificates of drugs involved with deaths varies over time. In 2017, 12% of drug overdose deaths did not include information on the specific type of drug(s) involved. Some of these deaths may have involved opioids or stimulants.

[b]Deaths are classified using the International Classification of Diseases, Tenth Revision (ICD–10). Drug overdose deaths are identified using underlying cause-of-death codes X40–X44 (unintentional), X60–X64 (suicide), X85 (homicide), and Y10–Y14 (undetermined).

[c]Drug overdose deaths, as defined, that involve synthetic opioids other than methadone (T40.4).

[d]Drug overdose deaths, as defined, that involve natural and semi-synthetic opioids (T40.2) or methadone (T40.3).

[e]Drug overdose deaths, as defined, that involve heroin (T40.1).

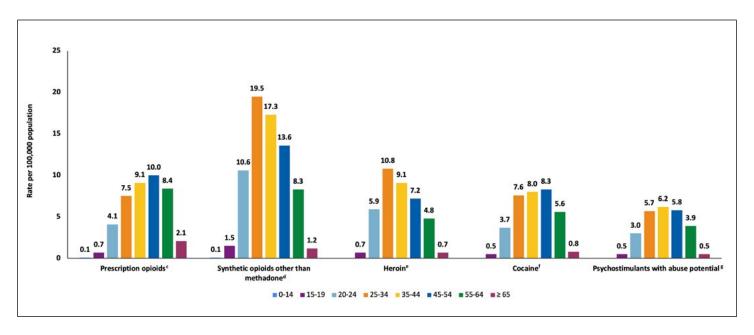[f]Drug overdose deaths, as defined, that involve cocaine (T40.5).

[g]Drug overdose deaths, as defined, that involve psychostimulants with abuse potential (T43.6).

FIGURE 2C   **Trends in drug overdose deaths**

Rates[a] per 100,000 population of drug overdose deaths[b] by drug or drug class and age category — United States, 2017

Source: National Vital Statistics System, Mortality File, CDC WONDER.

[a]Rate per 100,000 population using the vintage year population of the data year. Because deaths might involve more than one drug, some deaths are included in more than one category. Specification on death certificates of drugs involved with deaths varies over time. In 2017, approximately 12% of drug overdose deaths did not include information on the specific type of drug(s) involved. Some of these deaths may have involved opioids or stimulants.

[b]Deaths are classified using the International Classification of Diseases, Tenth Revision (ICD–10). Drug overdose deaths are identified using underlying cause-of-death codes X40–X44 (unintentional), X60–X64 (suicide), X85 (homicide), and Y10–Y14 (undetermined).

[c]Drug overdose deaths, as defined, that involve natural and semi-synthetic opioids (T40.2) or methadone (T40.3).

[d]Drug overdose deaths, as defined, that involve synthetic opioids other than methadone (T40.4).

[e]Drug overdose deaths, as defined, that involve heroin (T40.1).

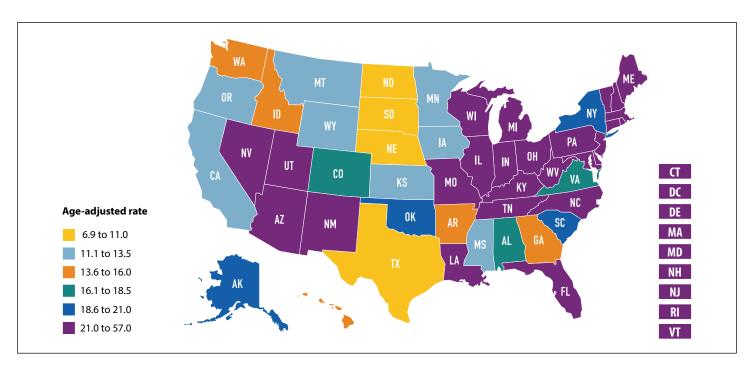[f]Drug overdose deaths, as defined, that involve cocaine (T40.5).

[g]Drug overdose deaths, as defined, that involve psychostimulants with abuse potential (T43.6).

FIGURE 2D   **Trends in drug overdose deaths**

Age-adjusted rates[a] per 100,000 population of drug overdose deaths[b] by state — United States, 2017

Age-adjusted rate

- 6.9 to 11.0
- 11.1 to 13.5
- 13.6 to 16.0
- 16.1 to 18.5
- 18.6 to 21.0
- 21.0 to 57.0

Source: National Vital Statistics System, Mortality File, CDC WONDER.

[a]Rate per 100,000 population age-adjusted to the 2000 U.S. standard population using the vintage year population of the data year.

[b]Deaths are classified using the International Classification of Diseases, Tenth Revision (ICD–10). Drug overdose deaths are identified using underlying cause-of-death codes X40–X44 (unintentional), X60–X64 (suicide), X85 (homicide), and Y10–Y14 (undetermined).

APPENDIX

SUPPLEMENTAL TABLE 1A

Opioid prescriptions filled and morphine milligram equivalents (MME) dispensed — United States, 2006–2018[a]

Opioid prescribing	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	% change from 2006 to 2018
Prescribing rate[b]														
All opioids	72.4	75.9	78.2	79.5	81.2	80.9	81.2	78.1	75.6	70.7	66.5	58.5	51.4	-29.0
High-dosage[c]	11.5	11.7	11.8	11.5	11.4	8.8	8.3	7.6	7.1	6.7	6.1	5.0	3.9	-66.4
Days of supply per Rx														
≥ 30 days	17.6	20.1	22.1	23.9	25.9	27.1	28.0	28.3	28.4	28.2	27.3	24.6	22.0	25.0
< 30 days	54.7	55.8	56.1	55.6	55.3	53.8	53.2	49.8	47.2	42.5	39.2	33.9	29.4	-46.3
< 3 days	16.2	16.2	15.8	15.4	15.1	14.5	14.2	13.0	12.1	11.1	10.2	8.9	8.2	-49.4
< 7 days	35.3	35.6	35.2	34.4	33.7	32.3	31.4	28.9	27.3	24.7	22.5	19.7	18.2	-48.6
≥ 3 days and < 7 days	19.1	19.4	19.4	18.9	18.7	17.8	17.2	16.0	15.2	13.6	12.3	10.8	10.0	-47.7
Dosage (MME)														
Average daily MME per Rx	59.7	59.1	58.7	58.1	58.0	53.9	51.8	50.2	48.9	48.1	47.1	45.3	42.9	-28.1
Average MME per Rx	828.2	861.9	894.1	922.6	963.8	946.7	911.5	901.7	895.9	907.5	901.2	873.4	828.1	0.0
MME per capita	599.3	653.9	699.4	733.0	782.3	765.9	740.6	704.1	896.0	641.4	599.3	511.1	424.6	-29.2
Average days supply per Rx filled	13.3	13.9	14.5	15.0	15.5	16.0	16.4	16.9	17.2	17.7	18.1	18.3	18.4	37.6

Source:: IQVIA™ Xponent 2006-2018. Data extracted in 2019.
Abbreviations: MME, morphine milligram equivalents; Rx, prescription.
[a]When analyzing trends using IQVIA™ data, data were compared with and without the IQVIA™ data modification starting in 2017 and found no significant differences in our findings.
[b]Rate per 100 persons adjusted to the U.S. census population.
[c]High-dosage prescriptions were defined as opioid prescriptions resulting in a daily dosage of ≥ 90 MME.

SUPPLEMENTAL TABLE 2A

Estimated numbers[a,b] and rates (not age-adjusted) per 100,000 of drug poisoning-related hospitalizations by selected substances, all intents[c] — United States, 2016 — United States, 2016

Socio-demographic characteristics	All drug poisonings[d]			All opioid poisonings[e]			Heroin poisonings[f]			Methadone poisonings[g]			Poisonings by other opioids[h]			Cocaine poisonings[i]			Methamphetamine poisonings[j]		
	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE
All Visits	326,200	100.9	1.27	91,840	28.4	0.43	22,360	6.9	0.19	5,675	1.8	0.06	65,110	20.1	0.31	20,090	6.2	0.25	17,725	5.5	0.17
Sex																					
Male	145,750	91.5	1.28	44,420	27.9	0.5	15,525	9.7	0.29	2,935	1.8	0.09	26,890	16.9	0.31	13,425	8.4	0.37	11,285	7.1	0.26
Female	180,450	109.9	1.45	47,420	28.9	0.48	6,835	4.2	0.15	2,740	1.7	0.08	38,220	23.3	0.4	6,665	4.1	0.18	6,440	3.9	0.14
Age Groups																					
0–14	9,380	15.4	0.87	640	1.0	0.11	—	—	—	—	—	—	600	1.0	0.11	—	—	—	410	0.7	0.08
15–19	22,880	108.2	3.15	2,005	9.5	0.5	435	2.1	0.21	145	0.7	0.13	1,445	6.8	0.43	345	1.6	0.2	925	4.4	0.34
20–24	26,495	118.4	2.3	6,245	27.9	0.92	3,410	15.2	0.65	300	1.3	0.18	2,685	12.0	0.55	1,395	6.2	0.39	1,855	8.3	0.47
25–34	53,380	119.2	2.08	15,530	34.7	0.85	8,035	17.9	0.59	965	2.2	0.16	6,935	15.5	0.48	3,775	8.4	0.38	5,215	11.6	0.44
35–44	49,265	121.5	2.12	12,840	31.7	0.8	4,195	10.3	0.45	885	2.2	0.17	8,005	19.7	0.57	3,915	9.7	0.45	4,015	9.9	0.43
45–54	58,065	135.6	2.33	17,140	40.0	0.89	3,350	7.8	0.44	1,180	2.8	0.2	12,940	30.2	0.7	5,610	13.1	0.76	3,115	7.3	0.45
55–64	53,780	129.7	2.07	20,205	48.7	1.01	2,400	5.8	0.34	1,440	3.5	0.23	16,575	40.0	0.85	4,115	9.9	0.62	1,715	4.1	0.29
≥65	52,955	107.5	1.58	17,235	35.0	0.75	530	1.1	0.11	715	1.5	0.13	15,925	32.3	0.71	885	1.8	0.16	475	1.0	0.1
Region																					
Northeast	57,355	101.8	3.27	16,945	30.1	1.11	6,440	11.4	0.59	1,260	2.2	0.21	9,575	17.0	0.64	5,750	10.2	0.97	1,195	2.1	0.14
Midwest	77,200	113.6	2.95	21,240	31.2	1.07	6,460	9.5	0.58	1,120	1.6	0.13	14,005	20.6	0.67	3,905	5.7	0.39	3,115	4.6	0.31
South	129,100	105.5	2.12	36,010	29.4	0.68	6,640	5.4	0.26	2,025	1.7	0.1	27,825	22.7	0.54	8,820	7.2	0.42	6,505	5.3	0.23
West	62,545	81.6	2.14	17,645	23.0	0.72	2,820	3.7	0.2	1,270	1.7	0.11	13,705	17.9	0.6	1,615	2.1	0.18	6,910	9.0	0.53

Abbreviations: No., number; SE, standard error.

[a] Weighted national estimates from HCUP Nationwide Inpatient Sample (NIS), 2016, Agency for Healthcare Research and Quality (AHRQ).

[b] In-hospital deaths and patients who transferred from another hospital were excluded. Visits with missing age and sex were excluded. Numbers subject to rounding error.

[c] Includes poisonings of accidental (unintentional) or undetermined intent and those attributable to intentional self-harm and assault.

[d] Includes ICD-10-CM/PCS codes T36-T50. See technical notes for additional information.

[e] Includes ICD-10-CM/PCS codes T40.0, T40.1, T40.2, T40.3, T40.6, T40.69.

[f] Includes ICD-10-CM/PCS code T40.1.

[g] Includes ICD-10-CM/PCS code T40.3.

[h] Includes ICD-10-CM/PCS codes T40.0, T40.2, T40.4, T40.6, T40.69.

[i] Includes ICD-10-CM/PCS code T40.5.

[j] Includes ICD-10-CM/PCS code T43.62.

[k] Rates calculated per 100,000 population.

[l] Because the relative standard error was > 30% or the standard error = 0, the value of the estimate was considered unreliable and was not reported.

[m] Rates cannot be calculated based on the available data.

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SUPPLEMENTAL TABLE 2A

Estimated number[a,b] and rate per 100,000 population of drug poisoning-related hospitalizations by selected substances — United States, 2016

Socio-demographic characteristics	All drug poisonings[d]			All opioid poisonings[e]			Heroin poisonings[f]			Methadone poisonings[g]			Poisonings by other opioids[h]			Cocaine poisonings[i]			Methamphetamine poisonings[j]		
	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE
2013 urbanization category																					
Large central metropolitan	94,070	94.4	3.27	26,270	26.4	1.01	7,360	7.4	0.44	2,040	2.0	0.13	17,380	17.4	0.68	9,095	9.1	0.66	5,075	5.1	0.31
Large fringe metropolitan	74,645	92.7	3.2	22,665	28.1	1.07	6,710	8.3	0.43	1,120	1.4	0.11	15,140	18.8	0.72	4,265	5.3	0.35	3,065	3.8	0.23
Medium metropolitan	75,170	111.2	5.25	21,265	31.5	1.55	4,730	7.0	0.48	1,185	1.8	0.16	15,575	23.1	1.14	3,835	5.7	0.42	4,200	6.2	0.47
Small metropolitan	33,690	114.2	6.5	8,695	29.5	1.78	1,610	5.5	0.49	470	1.6	0.19	6,695	22.7	1.42	1,125	3.8	0.43	2,195	7.4	0.75
Micropolitan	28,100	103.0	3.58	7,535	27.6	1.15	1,195	4.4	0.33	385	1.4	0.17	6,000	22.0	0.99	760	2.8	0.3	1,605	5.9	0.42
Noncore	17,500	92.7	3.73	4,615	24.5	1.22	395	2.1	0.27	370	2.0	0.25	3,940	20.9	1.1	450	2.4	0.29	1,105	5.9	0.53
Unknown	3,025	m	m	795	m	m	360	m	m	105	m	m	380	m	m	560	m	m	480	m	m

Abbreviations: No., number; SE, standard error.

[a] Weighted national estimates from HCUP Nationwide Inpatient Sample (NIS), 2016, Agency for Healthcare Research and Quality (AHRQ).

[b] In-hospital deaths and patients who transferred from another hospital were excluded. Visits with missing age and sex were excluded. Numbers subject to rounding error.

[c] Includes poisonings of accidental (unintentional) or undetermined intent and those attributable to intentional self-harm and assault.

[d] Includes ICD-10-CM/PCS codes T36-T50. See technical notes for additional information.

[e] Includes ICD-10-CM/PCS codes T40.0, T40.1, T40.2, T40.3, T40.6, T40.69.

[f] Includes ICD-10-CM/PCS code T40.1.

[g] Includes ICD-10-CM/PCS code T40.3.

[h] Includes ICD-10-CM/PCS codes T40.0, T40.2, T40.4, T40.6, T40.69.

[i] Includes ICD-10-CM/PCS code T40.5.

[j] Includes ICD-10-CM/PCS code T43.62.

[k] Rates calculated per 100,000 population.

[l] Because the relative standard error was > 30% or the standard error = 0, the value of the estimate was considered unreliable and was not reported.

[m] Rates cannot be calculated based on the available data.

SUPPLEMENTAL TABLE 2B

Estimated numbers[a,b] and rates (not age-adjusted) per 100,000 of drug poisoning-related hospitalizations by selected substances, unintentional and undetermined intents[c] — United States, 2016

Socio-demographic characteristics	All drug poisonings[d]			All opioid poisonings[e]			Heroin poisonings[f]			Methadone poisonings[g]			Poisonings by other opioids[h]			Cocaine poisonings[i]			Methamphetamine poisonings[j]		
	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE
All Visits	193,150	59.7	0.78	73,650	22.8	0.36	19,325	6.0	0.18	4,810	1.5	0.06	50,515	15.6	0.25	17,620	5.4	0.24	14,005	4.3	0.15
Sex																					
Male	97,320	61.1	0.94	36,880	23.2	0.44	13,525	8.5	0.26	2,595	1.6	0.08	21,545	13.5	0.26	11,975	7.5	0.35	9,450	5.9	0.24
Female	95,830	58.4	0.79	36,770	22.4	0.4	5,800	3.5	0.14	2,215	1.3	0.07	28,970	17.6	0.33	5,645	3.4	0.17	4,555	2.8	0.11
Age Groups																					
0–14	4,765	7.8	0.5	465	0.8	0.09	—	—	—	—	—	—	425	0.7	0.09	—	—	—	310	0.5	0.07
15–19	5,190	24.5	0.93	900	4.3	0.33	370	1.7	0.2	85	0.4	0.1	455	2.2	0.24	300	1.4	0.19	430	2.0	0.23
20–24	11,385	50.9	1.27	4,715	21.1	0.79	2,995	13.4	0.61	260	1.2	0.17	1,590	7.1	0.42	1,180	5.3	0.35	1,395	6.2	0.4
25–34	28,030	62.6	1.26	12,040	26.9	0.72	6,805	15.2	0.52	795	1.8	0.14	4,745	10.6	0.38	3,145	7.0	0.34	4,005	8.9	0.38
35–44	25,860	63.8	1.29	9,715	24.0	0.68	3,650	9.0	0.41	740	1.8	0.16	5,560	13.7	0.47	3,285	8.1	0.42	3,215	7.9	0.4
45–54	33,935	79.3	1.63	13,125	30.7	0.78	2,865	6.7	0.41	1,010	2.4	0.18	9,495	22.2	0.59	4,995	11.7	0.73	2,645	6.2	0.42
55–64	38,845	93.7	1.69	17,135	41.3	0.91	2,135	5.1	0.32	1,245	3.0	0.21	13,900	33.5	0.77	3,825	9.2	0.6	1,575	3.8	0.28
≥65	45,140	91.6	1.42	15,555	31.6	0.7	500	1.0	0.11	630	1.3	0.13	14,345	29.1	0.67	845	1.7	0.16	430	0.9	0.1
Region																					
Northeast	35,635	63.2	2.26	13,915	24.7	0.97	5,610	10.0	0.53	1,090	1.9	0.19	7,525	13.4	0.55	5,170	9.2	0.94	850	1.5	0.12
Midwest	41,325	60.8	1.73	16,605	24.4	0.9	5,540	8.1	0.54	915	1.3	0.12	10,405	15.3	0.52	3,350	4.9	0.36	2,185	3.2	0.26
South	78,705	64.3	1.26	29,025	23.7	0.57	5,725	4.7	0.23	1,710	1.4	0.09	21,945	17.9	0.45	7,665	6.3	0.4	5,000	4.1	0.19
West	37,485	48.9	1.32	14,105	18.4	0.6	2,450	3.2	0.18	1,095	1.4	0.1	10,640	13.9	0.49	1,435	1.9	0.17	5,970	7.8	0.51

Abbreviations: No., number; SE, standard error.

[a] Weighted national estimates from HCUP Nationwide Inpatient Sample (NIS), 2016, Agency for Healthcare Research and Quality (AHRQ).

[b] In-hospital deaths and patients who transferred from another hospital were excluded. Visits with missing age and sex were excluded. Numbers subject to rounding error.

[c] Includes poisonings of accidental (unintentional) or undetermined intent. Poisonings attributable to intentional self-harm and assault were excluded.

[d] Includes ICD-10-CM/PCS codes T36-T50. See technical notes for additional information.

[e] Includes ICD-10-CM/PCS codes T40.0, T40.1, T40.2, T40.3, T40.6, T40.69.

[f] Includes ICD-10-CM/PCS code T40.1.

[g] Includes ICD-10-CM/PCS code T40.3.

[h] Includes ICD-10-CM/PCS codes T40.0, T40.2, T40.4, T40.6, T40.69.

[i] Includes ICD-10-CM/PCS code T40.5.

[j] Includes ICD-10-CM/PCS code T43.62.

[k] Rates calculated per 100,000 population.

[l] Because the relative standard error was > 30% or the standard error = 0, the value of the estimate was considered unreliable and was not reported.

[m] Rates cannot be calculated based on the available data.

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SUPPLEMENTAL TABLE 2B

Estimated numbers[a,b] and rates (not age-adjusted) per 100,000 of drug poisoning-related hospitalizations by selected substances, unintentional and undetermined intents[c] — United States, 2016

Socio-demographic characteristics	All drug poisonings[d]			All opioid poisonings[e]			Heroin poisonings[f]			Methadone poisonings[g]			Poisonings by other opioids[h]			Cocaine poisonings[i]			Methamphetamine poisonings[j]		
	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE
2013 urbanization category																					
Large central metropolitan	60,060	60.3	2.19	21,540	21.6	0.87	6,515	6.5	0.41	1,795	1.8	0.12	13,665	13.7	0.56	8,240	8.3	0.63	4,235	4.3	0.29
Large fringe metropolitan	44,690	55.5	1.94	18,320	22.7	0.88	5,755	7.1	0.37	910	1.1	0.09	11,875	14.7	0.58	3,710	4.6	0.31	2,345	2.9	0.2
Medium metropolitan	42,350	62.7	2.9	16,690	24.7	1.25	4,000	5.9	0.41	1,025	1.5	0.15	11,830	17.5	0.9	3,275	4.8	0.38	3,250	4.8	0.4
Small metropolitan	17,975	61.0	3.53	6,775	23.0	1.44	1,335	4.5	0.42	385	1.3	0.17	5,095	17.3	1.13	920	3.1	0.38	1,675	5.7	0.66
Micropolitan	15,655	57.4	2.02	5,915	21.7	0.94	1,040	3.8	0.3	300	1.1	0.15	4,605	16.9	0.81	590	2.2	0.25	1,255	4.6	0.36
Noncore	10,350	54.9	2.4	3,705	19.6	1.05	365	1.9	0.26	295	1.6	0.22	3,115	16.5	0.94	390	2.1	0.26	825	4.4	0.44
Unknown	2,070	m	m	705	m	m	315	m	m	100	m	m	330	m	m	495	m	m	420	m	m

Abbreviations: No, number; SE, standard error.

[a] Weighted national estimates from HCUP Nationwide Inpatient Sample (NIS), 2016, Agency for Healthcare Research and Quality (AHRQ).

[b] In-hospital deaths and patients who transferred from another hospital were excluded. Visits with missing age and sex were excluded. Numbers subject to rounding error.

[c] Includes poisonings of accidental (unintentional) or undetermined intent. Poisonings attributable to intentional self-harm and assault were excluded.

[d] Includes ICD-10-CM/PCS codes T36-T50. See technical notes for additional information.

[e] Includes ICD-10-CM/PCS codes T40.0, T40.1, T40.2, T40.3, T40.6, T40.69.

[f] Includes ICD-10-CM/PCS code T40.1.

[g] Includes ICD-10-CM/PCS code T40.3.

[h] Includes ICD-10-CM/PCS codes T40.0, T40.2, T40.4, T40.6, T40.69.

[i] Includes ICD-10-CM/PCS code T40.5.

[j] Includes ICD-10-CM/PCS code T43.62.

[k] Rates calculated per 100,000 population.

[l] Because the relative standard error was > 30% or the standard error = 0, the value of the estimate was considered unreliable and was not reported.

[m] Rates cannot be calculated based on the available data.

SUPPLEMENTAL TABLE 2C

Estimated numbers[a,b] and rates (not age-adjusted) per 100,000 of drug poisoning-related emergency department visits by selected sub-stances, all intents[c] — United States, 2016

Socio-demographic characteristics	All drug poisonings[d] No.	Rate[k]	SE	All opioid poisonings[e] No.	Rate[k]	SE	Heroin poisonings[f] No.	Rate[k]	SE	Methadone poisonings[g] No.	Rate[k]	SE	Poisonings by other opioids[h] No.	Rate[k]	SE	Cocaine poisonings[i] No.	Rate[k]	SE	Methamphetamine poisonings[j] No.	Rate[k]	SE
All Visits	577,794	178.7	6.51	197,970	61.2	4.32	123,272	38.1	3.43	3,434	1.1	0.09	72,065	22.3	1.02	8,617	2.7	0.18	16,341	5.1	0.24
Sex																					
Male	290,607	182.5	7.78	124,643	78.3	5.84	84,453	53.0	4.67	1,810	1.1	0.12	38,967	24.5	1.33	5,654	3.6	0.25	10,268	6.4	0.36
Female	287,187	174.9	5.65	73,328	44.7	2.89	38,819	23.6	2.26	1,625	1.0	0.08	33,099	20.2	0.78	2,963	1.8	0.14	6,073	3.7	0.17
Age Groups																					
0–14	77,450	127.0	5.89	2,716	4.5	0.32	—	—	—	114	0.2	0.04	2,533	4.2	0.29	62	0.1	0.03	1,810	3.0	0.19
15–19	63,321	299.4	10.66	6,130	29.0	1.52	2,548	12.0	1.11	80	0.4	0.09	3,497	16.5	0.85	409	1.9	0.22	1,673	7.9	0.47
20–24	68,156	304.5	14.08	29,350	131.1	9.77	21,603	96.5	8.18	298	1.3	0.21	7,594	33.9	2.04	1,200	5.4	0.48	2,504	11.2	0.71
25–34	133,555	298.3	16.51	71,975	160.8	13.35	53,291	119.0	11.1	802	1.8	0.19	18,324	40.9	2.59	2,828	6.3	0.51	5,219	11.7	0.66
35–44	81,061	199.9	10.13	36,385	89.7	7.56	23,962	59.1	6.02	549	1.4	0.14	12,078	29.8	1.77	1,841	4.5	0.39	2,876	7.1	0.53
45–54	66,409	155.1	6.41	25,939	60.6	4.41	13,799	32.2	3.32	698	1.6	0.21	11,489	26.8	1.32	1,454	3.4	0.3	1,589	3.7	0.35
55–64	46,682	112.5	4.08	17,219	41.5	2.63	6,988	16.8	1.8	608	1.5	0.21	9,668	23.3	1.09	738	1.8	0.21	512	1.2	0.15
≥ 65	41,161	83.5	2.46	8,256	16.8	0.67	1,031	2.1	0.26	284	0.6	0.08	6,882	14.0	0.55	86	0.2	0.04	158	0.3	0.07

Abbreviation: No., number; SE, standard error.

aWeighted national estimates from HCUP Nationwide Emergency Department Sample (NEDS), 2016, Agency for Healthcare Research and Quality (AHRQ).

bPersons who were hospitalized, died, or transferred to another facility were excluded. Visits with missing age and sex were excluded. Numbers subject to rounding error.

cIncludes poisonings of accidental (unintentional) or undetermined intent and those attributable to intentional self-harm and assault.

dIncludes ICD-10-CM/PCS codes T36-T50. See technical notes for additional information.

eIncludes ICD-10-CM/PCS codes T40.0, T40.1, T40.2, T40.3, T40.6, T40.69.

fIncludes ICD-10-CM/PCS code T40.1.

gIncludes ICD-10-CM/PCS code T40.3.

hIncludes ICD-10-CM/PCS codes T40.0, T40.2, T40.4, T40.6, T40.69.

iIncludes ICD-10-CM/PCS code T40.5.

jIncludes ICD-10-CM/PCS code T43.62.

kRates calculated per 100,000 population.

lBecause the relative standard error was > 30% or the standard error = 0, the value of the estimate was considered unreliable and was not reported.

mRates cannot be calculated based on the available data.

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SUPPLEMENTAL TABLE 2C

Estimated numbers[a,b] and rates (not age-adjusted) per 100,000 of drug poisoning-related emergency department visits by selected substances, all intents[c] — United States, 2016

Socio-demographic characteristics	All drug poisonings[d]			All opioid poisonings[e]			Heroin poisonings[f]			Methadone poisonings[g]			Poisonings by other opioids[h]			Cocaine poisonings[i]			Methamphetamine poisonings[j]		
	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE
U.S. census region of residence																					
Northeast	103,639	183.9	17.05	49,338	87.5	11.4	35,202	62.5	9.22	631	1.1	0.17	13,717	24.3	2.67	1,752	3.1	0.37	1,077	1.9	0.19
Midwest	149,216	219.5	16.72	56,896	83.7	12.07	38,858	57.2	9.48	596	0.9	0.13	17,638	25.9	2.81	1,673	2.5	0.35	3,656	5.4	0.44
South	206,343	168.5	11.18	65,632	53.6	7.36	38,145	31.2	5.9	1,178	1.0	0.12	26,712	21.8	1.67	4,042	3.3	0.37	5,703	4.7	0.28
West	118,597	154.7	7.64	26,105	34.1	3.08	11,067	14.4	2.04	1,029	1.3	0.27	13,999	18.3	1.13	1,150	1.5	0.28	5,906	7.7	0.81
2013 urbanization category																					
Large central metropolitan	159,308	159.9	10.78	48,726	48.9	4.92	29,267	29.4	3.72	1,322	1.3	0.21	18,318	18.4	1.43	2,752	2.8	0.35	4,795	4.8	0.51
Large fringe metropolitan	127,661	158.5	13.55	55,351	68.7	8.67	37,490	46.5	6.86	539	0.7	0.07	17,524	21.8	2.23	1,845	2.3	0.3	2,434	3.0	0.3
Medium metropolitan	135,762	200.9	19.93	51,675	76.5	13.62	33,899	50.2	10.74	652	1.0	0.13	17,387	25.7	3.05	2,341	3.5	0.45	3,190	4.7	0.38
Small metropolitan	56,864	192.8	18.79	15,118	51.3	7.45	8,457	28.7	5.57	327	1.1	0.2	6,361	21.6	2.22	615	2.1	0.34	1,951	6.6	0.86
Micropolitan	57,860	212.1	13.11	16,729	61.3	7.32	9,061	33.2	5.19	296	1.1	0.15	7,475	27.4	2.36	571	2.1	0.26	2,094	7.7	0.59
Noncore	33,927	179.8	9.45	7,061	37.4	2.91	2,768	14.7	1.98	209	1.1	0.19	4,097	21.7	1.49	269	1.4	0.22	1,356	7.2	0.62
Unknown	6,413	m		3,311	m		2,330	m			m		903	m		223	m		l	m	

Abbreviation: No., number; SE, standard error.

[a]Weighted national estimates from HCUP Nationwide Emergency Department Sample (NEDS), 2016, Agency for Healthcare Research and Quality (AHRQ).

[b]Persons who were hospitalized, died, or transferred to another facility were excluded. Visits with missing age and sex were excluded. Numbers subject to rounding error.

[c]Includes poisonings of accidental (unintentional) or undetermined intent and those attributable to intentional self-harm and assault.

[d]Includes ICD-10-CM/PCS codes T36-T50. See technical notes for additional information.

[e]Includes ICD-10-CM/PCS codes T40.0, T40.1, T40.2, T40.3, T40.6, T40.69.

[f]Includes ICD-10-CM/PCS code T40.1.

[g]Includes ICD-10-CM/PCS code T40.3.

[h]Includes ICD-10-CM/PCS codes T40.0, T40.2, T40.4, T40.6, T40.69.

[i]Includes ICD-10-CM/PCS code T40.5.

[j]Includes ICD-10-CM/PCS code T43.62.

[k]Rates calculated per 100,000 population.

[l]Because the relative standard error was > 30% or the standard error = 0, the value of the estimate was considered unreliable and was not reported.

[m]Rates cannot be calculated based on the available data.

SUPPLEMENTAL TABLE 2D

Estimated numbers[a,b] and rates (not age-adjusted) per 100,000 of drug poisoning-related emergency department visits by selected substances, unintentional and undetermined intents[c] — United States, 2016

Socio-demographic characteristics	All drug poisonings[d]			All opioid poisonings[e]			Heroin poisonings[f]			Methadone poisonings[g]			Poisonings by other opioids[h]			Cocaine poisonings[i]			Methamphetamine poisonings[j]		
	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE	No.	Rate[k]	SE
All Visits	435,983	134.8	5.63	183,147	56.6	4.24	119,465	36.9	3.38	3,038	0.9	0.08	61,318	19.0	0.97	7,399	2.3	0.17	13,131	4.1	0.22
Sex																					
Male	243,504	152.9	7.22	117,939	74.1	5.75	81,874	51.4	4.61	1,612	1.0	0.12	34,941	21.9	1.29	4,867	3.1	0.23	8,532	5.4	0.34
Female	192,479	117.2	4.24	65,208	39.7	2.81	37,591	22.9	2.22	1,426	0.9	0.07	26,377	16.1	0.69	2,532	1.5	0.13	4,600	2.8	0.14
Age Groups																					
0–14	64,701	106.1	4.75	2,376	3.9	0.29	—	—	—	101	0.2	0.04	2,223	3.6	0.27	57	0.1	0.03	1,638	2.7	0.17
15–19	27,126	128.2	4.36	4,152	19.6	1.34	2,421	11.4	1.1	—	—	—	1,670	7.9	0.52	318	1.5	0.2	994	4.7	0.35
20–24	49,091	219.3	12.12	27,254	121.8	9.55	20,910	93.4	8.01	285	1.3	0.2	6,197	27.7	1.89	1,021	4.6	0.45	2,015	9.0	0.65
25–34	106,591	238.1	15.34	68,086	152.1	13.14	51,692	115.5	10.93	718	1.6	0.18	16,065	35.9	2.54	2,458	5.5	0.46	4,218	9.4	0.59
35–44	61,935	152.7	9.19	33,753	83.2	7.44	23,176	57.2	5.94	446	1.1	0.12	10,299	25.4	1.7	1,570	3.9	0.36	2,330	5.7	0.48
45–54	50,211	117.3	5.56	23,775	55.5	4.3	13,458	31.4	3.28	584	1.4	0.2	9,769	22.8	1.22	1,250	2.9	0.27	1,381	3.2	0.34
55–64	38,332	92.4	3.58	16,017	38.6	2.57	6,765	16.3	1.77	577	1.4	0.2	8,710	21.0	1.03	652	1.6	0.2	408	1.0	0.14
≥ 65	37,997	77.1	2.29	7,734	15.7	0.65	1,009	2.0	0.26	279	0.6	0.08	6,384	13.0	0.53	72	0.1	0.04	147	0.3	0.07

Abbreviations: No., number; SE, standard error.
[a]Weighted national estimates from HCUP Nationwide Emergency Department Sample (NEDS), 2016, Agency for Healthcare Research and Quality (AHRQ).
[b]Persons who were hospitalized, died, or transferred to another facility were excluded. Visits with missing age and sex were excluded. Numbers subject to rounding error.
[c]Includes poisonings of accidental (unintentional) or undetermined intent. Poisonings attributable to intentional self-harm and assault were excluded.
[d]Includes ICD-10-CM/PCS codes T36-T50. See technical notes for additional information.
[e]Includes ICD-10-CM/PCS codes T40.0, T40.1, T40.2, T40.3, T40.6, T40.69.
[f]Includes ICD-10-CM/PCS code T40.1.

[g]Includes ICD-10-CM/PCS code T40.3.
[h]Includes ICD-10-CM/PCS codes T40.0, T40.2, T40.4, T40.6, T40.69.
[i]Includes ICD-10-CM/PCS code T40.5.
[j]Includes ICD-10-CM/PCS code T43.62.
[k]Rates calculated per 100,000 population.
[l]Because the relative standard error was > 30% or the standard error = 0, the value of the estimate was considered unreliable and was not reported.
[m]Rates cannot be calculated based on the available data.

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SUPPLEMENTAL TABLE 2D

Estimated numbers[a,b] and rates (not age-adjusted) per 100,000 of drug poisoning-related emergency department visits by selected substances, unintentional and undetermined intents[c] — United States, 2016

Socio-demographic characteristics	All drug poisonings[d] No.	Rate[k]	SE	All opioid poisonings[e] No.	Rate[k]	SE	Heroin poisonings[f] No.	Rate[k]	SE	Methadone poisonings[g] No.	Rate[k]	SE	Poisonings by other opioids[h] No.	Rate[k]	SE	Cocaine poisonings[i] No.	Rate[k]	SE	Methamphetamine poisonings[j] No.	Rate[k]	SE
U.S. census region of residence																					
Northeast	87,219	154.8	14.99	47,472	84.2	11.14	34,355	61.0	9.05	579	1.0	0.16	12,740	22.6	2.6	1,630	2.9	0.35	919	1.6	0.17
Midwest	112,195	165.0	15.07	52,998	78.0	11.87	37,571	55.3	9.33	506	0.7	0.12	15,067	22.2	2.73	1,377	2.0	0.31	2,787	4.1	0.38
South	156,672	128.0	9.57	60,496	49.4	7.23	37,005	30.2	5.83	1,019	0.8	0.11	22,819	18.6	1.56	3,404	2.8	0.34	4,387	3.6	0.22
West	79,897	104.2	5.52	22,181	28.9	2.95	10,534	13.7	2.01	934	1.2	0.27	10,692	13.9	0.96	988	1.3	0.27	5,038	6.6	0.77
2013 urbanization category																					
Large central metropolitan	117,108	117.5	8.24	44,721	44.9	4.75	28,314	28.4	3.66	1,245	1.2	0.2	15,339	15.4	1.27	2,334	2.3	0.32	4,035	4.0	0.47
Large fringe metropolitan	103,166	128.1	11.9	52,651	65.4	8.46	36,680	45.5	6.76	474	0.6	0.07	15,694	19.5	2.1	1,671	2.1	0.28	1,936	2.4	0.24
Medium metropolitan	103,345	152.9	17.24	47,779	70.7	13.34	32,723	48.4	10.58	540	0.8	0.11	14,717	21.8	2.87	1,957	2.9	0.42	2,460	3.6	0.3
Small metropolitan	40,973	138.9	14.1	13,576	46.0	7.11	8,161	27.7	5.42	288	1.0	0.2	5,142	17.4	1.88	520	1.8	0.3	1,461	5.0	0.73
Micropolitan	41,966	153.8	10.98	15,107	55.4	7.16	8,708	31.9	5.06	224	0.8	0.13	6,255	22.9	2.28	505	1.9	0.24	1,721	6.3	0.53
Noncore	24,107	127.8	6.58	6,145	32.6	2.7	2,602	13.8	1.9	179	0.9	0.17	3,355	17.8	1.24	209	1.1	0.2	1,041	5.5	0.55
Unknown	5,319	m	m	3,167	m	m	2,277	m	m	—	m	m	817	m	m	203	m	m	—	—	—

Abbreviations: No, number; SE, standard error.

[a]Weighted national estimates from HCUP Nationwide Emergency Department Sample (NEDS), 2016, Agency for Healthcare Research and Quality (AHRQ).

[b]Persons who were hospitalized, died, or transferred to another facility were excluded. Visits with missing age and sex were excluded. Numbers subject to rounding error.

[c]Includes poisonings of accidental (unintentional) or undetermined intent. Poisonings attributable to intentional self-harm and assault were excluded.

[d]Includes ICD-10-CM/PCS codes T36–T50. See technical notes for additional information.

[e]Includes ICD-10-CM/PCS codes T40.0, T40.1, T40.2, T40.3, T40.4, T40.6, T40.69.

[f]Includes ICD-10-CM/PCS code T40.1.

[g]Includes ICD-10-CM/PCS code T40.3.

[h]Includes ICD-10-CM/PCS codes T40.0, T40.2, T40.4, T40.6, T40.69.

[i]Includes ICD-10-CM/PCS code T40.5.

[j]Includes ICD-10-CM/PCS code T43.62.

[k]Rates calculated per 100,000 population.

[l]Because the relative standard error was > 30% or the standard error = 0, the value of the estimate was considered unreliable and was not reported.

[m]Rates cannot be calculated based on the available data.

SUPPLEMENTAL TABLE 3A

Trend analyses of age-adjusted rates[a] per 100,000 population of drug overdose deaths by drug or drug class—United States, 1999-2017

Drug Category[b]	Trend 1		Trend 2		Trend 3		Trend 4	
	Years[c]	APC (95% CL)	Years[c]	APC (95% CL)	Years[c]	APC (95% CL)	Years[c]	APC (95% CL)
Prescription opioids	1999–2006	18.7 (14.9–22.7)[d]	2006–2017	2.0 (1.0–3.1)[d]	n/a	n/a	n/a	n/a
Heroin	1999–2004	-2.0 (-7.1–3.4)	2004–2010	9.9 (4.9–15.1)[d]	2010–2015	31.4 (26.0–37.1)[d]	2015–2017	7.2 (-1.7–16.8)
Synthetic Opioids	1999–2013	8.4 (4.7–12.3)[d]	2013–2017	69.8 (56.0–84.9)[d]	n/a	n/a	n/a	n/a
Cocaine	1999–2006	10.1 (6.8–13.4)[d]	2006–2010	-14.1 (-22.9– -4.3)[d]	2010–2014	6.1 (-5.2–18.7)	2014–2017	37.6 (26.9–49.2)[d]
Psychostimulants with abuse potential	1999–2005	19.2 (11.2–27.8)[d]	2005–2008	-7.2 (-31.7–26.1)	2008–2012	20.2 (5.2–37.3)[d]	2012–2017	30.1 (26.0–34.3)[d]

Source: National Vital Statistics System Mortality File.

Abbreviations: APC, annual percent change; CL, confidence limits; n/a, not applicable.

[a] Rate per 100,000 persons adjusted to the U.S. census population.

[b] Deaths are classified using the International Classification of Diseases, Tenth Revision (ICD–10). Drug overdose deaths are identified using underlying cause-of-death codes X40–X44 (unintentional), X60–X64 (suicide), X85 (homicide), and Y10–Y14 (undetermined). Among deaths with drug overdose as the underlying cause, the type of drug(s) involved are indicated by the following ICD–10 codes: prescription opioids (T40.2, T40.3); heroin (T40.1); synthetic opioids, excluding methadone (T40.4); cocaine (T40.5) and psychostimulants with abuse potential (T43.6).

[c] Year category presented in each trend represents groupings as determined by joinpoint regression.

[d] Indicates that the annual percent change was significantly different from 0 (p<0.05).

SUPPLEMENTAL DATA
SUPPORTING FIGURE 2A

Age-adjusted rates[a] per 100,000 population of drug overdose deaths[b] and drug overdose deaths involving any opioid[c] for all intents and for unintentional intent by year — United States, 1999-2017

Year	Drug overdose deaths (of all intents)		Unintentional drug overdose deaths		Drug overdose deaths involving any opioid (of all intents)		Unintentional drug overdose deaths involving any opioid	
	Rate	SE	Rate	SE	Rate	SE	Rate	SE
1999	6.1	0.047	4.0	0.038	2.9	0.032	2.1	0.028
2000	6.2	0.047	4.1	0.038	3.0	0.033	2.2	0.028
2001	6.8	0.049	4.6	0.040	3.3	0.034	2.4	0.029
2002	8.2	0.053	5.7	0.045	4.1	0.038	3.1	0.033
2003	8.9	0.055	6.3	0.047	4.5	0.039	3.4	0.034
2004	9.4	0.057	6.8	0.048	4.7	0.040	3.6	0.035
2005	10.1	0.059	7.6	0.051	5.1	0.042	4.0	0.037
2006	11.5	0.062	8.8	0.055	5.9	0.045	4.8	0.040
2007	11.9	0.063	9.1	0.055	6.1	0.045	5.0	0.041
2008	11.9	0.063	9.2	0.055	6.4	0.046	5.3	0.042
2009	11.9	0.063	9.4	0.056	6.6	0.047	5.5	0.043
2010	12.3	0.064	9.7	0.057	6.8	0.047	5.7	0.044
2011	13.2	0.066	10.6	0.059	7.3	0.049	6.3	0.045
2012	13.1	0.065	10.6	0.059	7.4	0.049	6.4	0.046
2013	13.8	0.067	11.3	0.061	7.9	0.051	6.9	0.048
2014	14.7	0.069	12.1	0.063	9.0	0.054	7.9	0.051
2015	16.3	0.072	13.8	0.067	10.4	0.058	9.3	0.055
2016	19.8	0.080	17.1	0.075	13.3	0.066	11.9	0.062
2017	21.7	0.084	19.1	0.078	14.9	0.069	13.5	0.066

Source: National Vital Statistics System, Mortality File, CDC WONDER.
Abbreviation: SE, standard error.
[a]Rate per 100,000 population age-adjusted to the 2000 U.S. standard population using the vintage year population of the data year.
[b]Deaths are classified using the International Classification of Diseases, Tenth Revision (ICD–10). All drug overdose deaths are identified using underlying cause-of-death codes X40–X44 (unintentional), X60–X64 (suicide), X85 (homicide), and Y10–Y14 (undetermined). Unintentional drug overdose deaths are identified using underlying cause-of-death codes X40–X44. Note that 5.2% of drug overdose deaths in 2017 had undetermined intent; this is a decrease from 14.7% of drug overdose deaths that had undetermined intent in 1999. Some of these deaths may be unintentional drug overdose deaths.
[c]Drug overdose deaths, as defined, that involve opium (T40.0), heroin (T40.1), natural and semi-synthetic opioids (T40.2), methadone (T40.3), other synthetic opioids excluding methadone (T40.4), and other and unspecified narcotics (T40.6).

SUPPLEMENTAL DATA SUPPORTING FIGURE 2B

Age-adjusted rates[a] per 100,000 population of drug overdose deaths[b] by drug or drug class and year — United States, 1999-2017

Year	Prescription opioids[c]		Synthetic opioids other than methadone[d]		Heroin[e]		Cocaine[f]		Psychostimulants with abuse potential[g]	
	Rate	SE	Rate	SE	Rate	SE	Rate	SE	Rate	SE
1999	1.2	0.021	0.3	0.009	0.7	0.016	1.4	0.022	0.2	0.009
2000	1.3	0.022	0.3	0.010	0.7	0.015	1.3	0.021	0.2	0.009
2001	1.7	0.024	0.3	0.011	0.6	0.015	1.3	0.022	0.2	0.009
2002	2.3	0.028	0.4	0.012	0.7	0.016	1.6	0.023	0.3	0.011
2003	2.6	0.030	0.5	0.013	0.7	0.016	1.8	0.025	0.4	0.012
2004	2.9	0.032	0.6	0.014	0.6	0.015	1.9	0.025	0.4	0.012
2005	3.2	0.033	0.6	0.014	0.7	0.015	2.1	0.027	0.5	0.013
2006	3.9	0.036	0.9	0.017	0.7	0.016	2.5	0.029	0.5	0.013
2007	4.2	0.038	0.7	0.015	0.8	0.016	2.2	0.027	0.4	0.012
2008	4.3	0.038	0.8	0.016	1.0	0.018	1.7	0.024	0.4	0.012
2009	4.4	0.038	1.0	0.018	1.1	0.019	1.4	0.022	0.5	0.013
2010	4.7	0.039	1.0	0.018	1.0	0.018	1.3	0.021	0.6	0.014
2011	4.9	0.040	0.8	0.017	1.4	0.022	1.5	0.022	0.7	0.016
2012	4.5	0.038	0.8	0.017	1.9	0.025	1.4	0.022	0.8	0.017
2013	4.4	0.038	1.0	0.018	2.7	0.030	1.6	0.023	1.2	0.020
2014	4.6	0.038	1.8	0.024	3.4	0.034	1.7	0.024	1.4	0.021
2015	4.7	0.039	3.1	0.032	4.1	0.037	2.1	0.026	1.8	0.024
2016	5.2	0.041	6.2	0.045	4.9	0.040	3.2	0.032	2.4	0.028
2017	5.2	0.041	9.0	0.054	4.9	0.040	4.3	0.037	3.2	0.032

Source: National Vital Statistics System, Mortality File, CDC WONDER.

Abbreviation: SE, standard error.

[a]Rate per 100,000 population age-adjusted to the 2000 U.S. standard population using the vintage year population of the data year. Because deaths might involve more than one drug, some deaths are included in more than one category.

[b]Deaths are classified using the International Classification of Diseases, Tenth Revision (ICD–10). Drug overdose deaths are identified using underlying cause-of-death codes X40–X44 (unintentional), X60–X64 (suicide), X85 (homicide), and Y10–Y14 (undetermined).

[c]Drug overdose deaths, as defined, that involve natural and semi-synthetic opioids (T40.2) or methadone (T40.3).

[d]Drug overdose deaths, as defined, that involve synthetic opioids other than methadone (T40.4).

[e]Drug overdose deaths, as defined, that involve heroin (T40.1).

[f]Drug overdose deaths, as defined, that involve cocaine (T40.5).

[g]Drug overdose deaths, as defined, that involve psychostimulants with abuse potential (T43.6). Psychostimulants with abuse potential include drugs such as methamphetamine, 3,4-methylenedioxy-methamphetamine (MDMA), dextroamphetamine, levoamphetamine, methylphenidate (Ritalin), and caffeine.

SUPPLEMENTAL DATA SUPPORTING FIGURE 2C

Rates[a] per 100,000 population of drug overdose deaths[b] by drug or drug class and age category — United States, 2017

Year	Prescription opioids[c]		Synthetic opioids other than methadone[d]		Heroin[e]		Cocaine[f]		Psychostimulants with abuse potential[g]	
	Rate	SE	Rate	SE	Rate	SE	Rate	SE	Rate	SE
Age group (years)										
0–14	0.1	0.012	0.1	0.009	h	h	h	h	h	h
15–24	2.4	0.075	6.1	0.119	3.4	0.088	2.1	0.070	1.8	0.065
25–34	7.5	0.129	19.5	0.207	10.8	0.154	7.6	0.130	5.7	0.112
35–44	9.1	0.149	17.3	0.206	9.1	0.149	8.0	0.140	6.2	0.123
45–54	10.0	0.154	13.6	0.179	7.2	0.130	8.3	0.140	5.8	0.117
55–64	8.4	0.141	8.3	0.140	4.8	0.107	5.6	0.115	3.9	0.097
≥65	2.1	0.064	1.2	0.049	0.7	0.038	0.8	0.041	0.5	0.033

Source: National Vital Statistics System, Mortality File, CDC WONDER.

Abbreviation: SE, standard error.

[a]Rate per 100,000 population using the vintage year population of the data year. Because deaths might involve more than one drug, some deaths are included in more than one category.

[b]Deaths are classified using the International Classification of Diseases, Tenth Revision (ICD–10). Drug overdose deaths are identified using underlying cause-of-death codes X40–X44 (unintentional), X60–X64 (suicide), X85 (homicide), and Y10–Y14 (undetermined).

[c]Drug overdose deaths, as defined, that involve natural and semi-synthetic opioids (T40.2) or methadone (T40.3).

[d]Drug overdose deaths, as defined, that involve synthetic opioids other than methadone (T40.4).

[e]Drug overdose deaths, as defined, that involve heroin (T40.1).

[f]Drug overdose deaths, as defined, that involve cocaine (T40.5).

[g]Drug overdose deaths, as defined, that involve psychostimulants with abuse potential (T43.6). Psychostimulants with abuse potential include drugs such as methamphetamine, 3,4-methylenedioxy-methamphetamine (MDMA), dextroamphetamine, levoamphetamine, methylphenidate (Ritalin), and caffeine.

[h]Rates are suppressed when based on <20 deaths.

SUPPLEMENTAL DATA SUPPORTING FIGURE 2D

Age-adjusted rates[a] per 100,000 population of drug overdose deaths[b] by state — United States, 2017

State of residence	Age-adjusted rate	SE	State of residence	Age-adjusted rate	SE
Alabama	18.0	0.636	Montana	11.7	1.111
Alaska	20.2	1.704	Nebraska	8.1	0.674
Arizona	22.2	0.581	Nevada	21.6	0.847
Arkansas	15.5	0.749	New Hampshire	37.0	1.762
California	11.7	0.170	New Jersey	30.0	0.590
Colorado	17.6	0.561	New Mexico	24.8	1.147
Connecticut	30.9	0.973	New York	19.4	0.318
Delaware	37.0	2.072	North Carolina	24.1	0.499
District of Columbia	44.0	2.553	North Dakota	9.2	1.152
Florida	25.1	0.361	Ohio	46.3	0.664
Georgia	14.7	0.380	Oklahoma	20.1	0.738
Hawaii	13.8	0.998	Oregon	12.4	0.550
Idaho	14.4	0.953	Pennsylvania	44.3	0.620
Illinois	21.6	0.418	Rhode Island	31.0	1.786
Indiana	29.4	0.696	South Carolina	20.5	0.662
Iowa	11.5	0.638	South Dakota	8.5	1.019
Kansas	11.8	0.660	Tennessee	26.6	0.645
Kentucky	37.2	0.959	Texas	10.5	0.195
Louisiana	24.5	0.752	Utah	22.3	0.886
Maine	34.4	1.728	Vermont	23.2	2.075
Maryland	36.3	0.782	Virginia	17.9	0.468
Massachusetts	31.8	0.699	Washington	15.2	0.453
Michigan	27.8	0.551	West Virginia	57.8	1.901
Minnesota	13.3	0.502	Wisconsin	21.2	0.633
Mississippi	12.2	0.662	Wyoming	12.2	1.513
Missouri	23.4	0.647			

Source: National Vital Statistics System, Mortality File, CDC WONDER.

Abbreviation: SE, standard error.

[a]Rate per 100,000 population age-adjusted to the 2000 U.S. standard population using the vintage year population of the data year.

[b]Deaths are classified using the International Classification of Diseases, Tenth Revision (ICD–10). Drug overdose deaths are identified using underlying cause-of-death codes X40–X44 (unintentional), X60–X64 (suicide), X85 (homicide), and Y10–Y14 (undetermined).